South Australian Productivity Commission
Health and Medical Research in South Australia

The Hospital Research Foundation Submission

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Background

The Hospital Research Foundation (THRF) is grateful for the opportunity to provide a submission to the Commission. The ideas and opinions outlined in the document are primarily based on observation and involvement over the last ten years of providing non-government funding to the health and medical research (HMR) sector in South Australia (SA).

In addition to the overview of HMR already provided, THRF would like to suggest additional areas worth acknowledging, namely the contribution of non-government funding bodies to funding the research of South Australia and the importance of other HMR organisations to the state's performance.

Table 1 and 2 outline THRF's funding to SA and to the BioMed City Precinct in the last few years. This includes funding from charities within THRF's Group such as The Road Home, formerly The Repat Foundation, and the Centre for Creative Health. Table 3 summarises the NHMRC funding to SA and nationally over the same period. In the last two years, **THRF Group** funding to South Australian HMR exceeded 50% of the NHMRC funding received in the state (54.5% in 2018 with more than 29 million and 56.6% in 2019 with more than 25 million).

Since the creation of the Medical Research Future Fund (MRFF) in 2015, South Australia has received a total of $17,546,734 from this Fund (source https://www.health.gov.au/resources/publications/medical-research-future-fund-mrff-grant-recipients). This demonstrates that **THRF has provided more funding than the MRFF to South Australia every year.**

Table 1: THRF funding to the BioMed City Precinct

	Grant funding	Equipment	Total
2016 & 2017	$6,724,557	$2,193,281	$8,917,838
2018	$8,189,017	$1,777,021	$9,966,038
2019 (up to Aug)	$10,443,744	$46,004	$10,489,78
Total	$25,357,318	$4,016,306	$29,373,624

Table2: THRF funding to SA (inclusive of Table 1 funding): funds spread across all universities, SAHMRI and health networks and included allocations for multiple year grants.

	Total
2018	$25,005,834
2019	$29,443,167
Total	$54,449,001

Table3: NHMRC funding to SA in recent years

	SA	All states	Percent
2016 & 2017	$118,086,650	$1,706,500,379	6.9%
2018	$45,907,669	$783,269,192	5.9%
2019	$52,063,945	$923,247,229	5.6%

Source: Summary of results of NHMRC grant rounds (available at https://www.nhmrc.gov.au/funding/data-research/outcomes-funding-rounds)

This information was not provided in the overview of the Issues Paper with no mention of THRF despite it being the largest private HMR funder by a significant amount. THRF has and continues to fund large scale, impactful research projects in the state. This suggests that the starting point for the Inquiry may be too narrow and incurs the risk of not adequately identifying the challenges the HMR sector faces.

Specifically, THRF suggest that Table 2.1 of the Issues Paper

- fails to represent the richness and the diversity of funding bodies such as charitable foundations (including the THRF as noted above, but also other funders such as the Cancer Council, AusHealth) or international funding agencies (such as NIH).
- lacks granularity and fails to identify a number of key HMR participants, particularly the dependent Research Institutes, such as the Basil Hetzel Institute for Translational Health Research (SA Health) and the Robinson Research Institute (the University of Adelaide). This may result in an outcome that fails to facilitate a future sector that can capitalise on future opportunities.

THRF also wants to comment on the definition of Health and Medical Research (HMR) chosen for the Inquiry (Section 4.1 of the Issues Paper). In THRF's opinion, the definition is not extensive enough to capture the majority of HMR activity within South Australia. THRF prefers the definition provided by the Australia Research Council (ARC; ARC Medical Research Policy Version 2017.1)), which includes laboratory-based studies, animal-based disease models, pre-clinical studies, clinical studies and group/community-based studies that aim to understand the causes, treatment and/or prevention of human diseases and/or the maintenance of human health.

The future challenge of research in SA needs to be addressed in several areas:

- leadership with real and quantifiable purpose driven collaboration;
- quality of the workforce relative to size of the state;
- use of existing and new infrastructure as part of an overall 'fortress SA collaboration' solution;
- governance over research operations, available funding and use of leverage (including HSCGB funds); and
- the impact on the health and wellbeing of HMR beneficiaries – all South Australians.

3.1 Policy environment

3.1.1 Is there alignment between state and national policy and research priorities?

The state should define its own priorities and provide continued investment to the HMR sector in order to develop capacity and achieve positive community-oriented outcomes. The following are some suggestions of focus for SA:

- unmet need identification and focus in the Public Health System;
- unique areas of existing research excellence and focus;
- unique areas of clinical excellence focus such as: Burns, Renal (including transplantation), Surgical, Cancer, Heart Disease; Infectious diseases, Virology, Mental Health, Veterans' Health, Stroke;
- commercialisation opportunities developed from industry need and focus in collaboration with the academic and health sector; and
- public and private commercialisation partnership opportunities.

3.1.2 Have recent reforms to ethics approvals processes, such as the introduction of mutual acceptance, been successful?

Yes, the reforms have helped, however additional improvements are still needed.

Over recent years it has been very common for THRF to experience funded projects being delayed by months, in some cases years, because of lengthy and inefficient ethics processes from independent institutions. This has impacted researchers and patients who could benefit from the research and caused challenges from an accounting perspective for the grant funder. In some instances, THRF had to withdraw the funding offer because the funds allocated had to be redistributed to comply with accounting standards, which are quite inflexible in relation to liability commitments. These accounting standards do not consider the nuances of the medical research sectors delays and processes.

In one instance, a researcher had been trying to obtain ethics approval for a study in animals and after more than two years has still not been successful in obtaining this approval. From advice provided to the funder, this appears to be a bureaucratic hold up rather than an ethical dilemma. This has put considerable stress and delay on the research. The research group are currently trying to conduct the study in the United States where the research would not only be easier but also cheaper than in Australia. They mentioned that had the research been for humans they would have had the ethics approval more easily. This highlights a tendency for political correctness in Australia that might be harmful to medical research.

Streamlining ethics approvals is a solution worth considering. One proposal may be outsourcing all ethics approvals to an independent third party with strict instructions for their approach and timelines. This would result in a consistent approach to ethics approvals across the state, resulting in more efficiencies and cost savings.

The Birch Review conducted in 2018 provided a list of recommendations to improve HMR in SA. The first recommendation was to provide "*appropriate software be procured to ensure consistent management, database reporting and transparency of process for research governance activities*." This is currently under way and will lead to significant improvement in the ethics process. However, what is not recorded was that it was THRF who provided $860,000 for the implementation of the software for the first five years and without this funding this important initiative would not have happened.

Why is this a problem? It appears that the steering committee for this project has had many changes in personnel that the immediate collective memory of who provided funding (and possibly other decisions previously made) was not readily available. In fact, THRF was recently approached again and asked to provide a grant to this project. The person that made the second request had no knowledge of the large amount of funding that THRF had already committed to the project. This highlights another major problem in SA – the lack of corporate memory and record keeping in the government sector caused largely by the rapid movement of staff from critical roles. Often these personnel are moved on a temporary basis to fill short term vacancies. However, this regularly results in new staff, not fully briefed or with access to information and having to commence the familiarisation process from the beginning. This causes frustration with the external party who have already invested significant time in the discussions and project to that point. THRF believe this is where the phrase '*hurry up and wait'* may have been derived when dealing with government.

3.1.3 What impacts have South Australian Government policy initiatives over the last two decades had on the state's HMR sector?

Supporting the establishment of SAHMRI, the BioMed City Precinct and the Health Services Charitable Gifts Board (HSCGB) were positive. However, these initiatives are currently suffering from not fully materialising their original objectives.

SAHMRI

The Shine Young report released in 2008 was the validation for the development of SAHMRI. Another interpretation of what was identified in the Shine Young report was the lack of a focal point for research in SA. The lack of a vehicle that facilitates comprehensive state-wide outcomes which could be drawn from a collective understanding of research needs and a collaborative approach to the solution.

This was inscribed in SAHMRI's Constitution:

- develop a centre of excellence in both Australia and internationally for the benefit of the community in undertaking, promoting and expanding research relating to human medicine and health, the social determinants of health and health service delivery
- facilitate the transfer and practical application of knowledge acquired from its research activities to improve the health and wellbeing of the community
- develop, promote and create opportunities for the development and promotion of knowledge acquired from research activities
- work collaboratively and facilitate collaboration among universities, other research institutions and the government to achieve high-quality outcomes
- attract funding from within and outside Australia for the conduct of research relating to human medicine or health.

However, SAHMRI's website currently describes the organisation as *"South Australia's first independent flagship health and medical research institute."*

Rather than a cooperative focal point for collaboration, SAHMRI became an independent research institution – in other words, a competitor to existing organisations conducting and funding HMR in South Australia.

THRF encourages the commission to examine the following points observed as an external party:

- Initially, SAHMRI's board was more 'representative' than purely 'skills' based. One would expect that with a representative board in place, collaboration would have been more easily facilitated. However, some of the institutions that were represented initially on SAHMRI's Board have not ever had effective real collaboration with SAHMRI. Because SAHMRI could not create a process that encouraged collegiate outcomes, the HMR community took an opportunistic approach: collaborate if it serves, compete otherwise. Although things have improved, the division is still evident today. **Is the structure of an independent competitor the right one?**

- At the time of its establishment, THRF's understanding was that SAHMRI's objective was to assist in attracting 17% of the NHMRC's national grant allocations into SA. However, the actual current state achievement is closer to 7%. SAHMRI was intended to enhance outcomes in HMR in South Australia, however these funding statistics question if the establishment of the institute has achieved this objective. THRF believes that a significant part of this lack of achievement may be due to a lack of clarity of purpose and a lack of overall leadership in the sector and in government.

What should SAHMRI's real objectives be? Does a competitive institution structure foster real collaboration?

What is the way forward? A review of the Objectives and Purpose of SAHMRI may form part of an overall purpose and objectives driven review of the sector. SAHMRI could become a jointly owned focal point for universities, health networks, Industry and non-government funding bodies to work towards collective research and translation outcomes. It could become a facilitator rather than a competitor.

<u>The BioMed City Precinct</u>

When you consider the well-established and well-funded HMR research precincts in Australia (for example, the Parkville precinct in Melbourne, a world renowned HMR precinct) it is apparent that the relevant state government has played an active role in promoting the HMR Industries. This assistance is not limited to strategic funding, but includes active engagement through the provision of leadership knowledge, expertise and logistical support that promotes (1) joined up pathways for the translation of discovery to impact or dollars and (2) the growth of the sector.

In South Australia at least three government departments profess a role in the promotion of HMR industries in the South Australia – Department of Health and Wellbeing (DHW), Department of Innovation and Skills (DIS) and Department of Trade and Investment (DTI). At present, DIS and DTI are preparing strategic documents that discuss the translation of research, including HMR translation (DIS through the Office of the Chief Scientist and DTI,

through the Director of Health and Medical Industries). As the Inquiry notes, there is no whole-of-government approach to HMR in the State.

In order for the SA BioMed City precinct to become a centre of HMR research, it needs more investment from the state government. This investment must take the form of (1) a clearly articulated and collaborative approach from government to develop the whole-of-government approach the sector so desperately needs *and* (2) strategic funding, leadership and expertise in the HMR sector to support a joined up pathway for fostering the translation of research into impact and industry.

<u>The Health Services Charitable Gifts Act 2011 (HSCGB)</u>

The Charitable Gifts act was proclaimed in 2011. The corpus of the fund was $143.5 million as of end of June 2019 based on the annual audited financial report from HSCGB.

This Act, whilst important to regulate the donations received via state-owned health facilities, has had some unintended consequences:

1. Researchers find it difficult to access the funds;
   The funds donated are not being used for immediate purpose-driven research, which likely does not fulfil the donors' intentions.
2. It does not deal with once-in-a-century health crisis by allowing the funds to be used for urgent need because of the lack of flexibility in accessing them. If the funds cannot be spent during such a crisis, when will they be spent?
3. SAHMRI, as an independent private entity, is eligible to access funds from the HSCGB but not the universities who also support health and medical research in SA.

The funds are not currently accessed easily enough to be used in a time appropriate way.

THRF has been requested many times in the last few years to fund expensive and important projects with the justification that without THRF funding the project would have not proceeded. In other words, THRF seemed to be the only organisation in the state that had the funding available and the nimbleness and flexibility to provide funding in a timely manner. THRF has acquiesced many times, despite being fully aware that the funds do exist within HSCGB but are not made available, even for these important projects.

The HSCG Act needs review. One suggestion is that this fund be set as a limited term fund and the expenditure should be targeted at short and medium term community impact projects and available for leveraged or matching grant funding for federal government grants applications.

There could be a valuable use of HSCGB funds as 'leverage' to obtain federal grant allocation (where challenge grants are common). In these cases, if a grant from SA is successful, there is comfort in knowing that funding success has been achieved after assessment by global and national experts. This approach would result in more efficient grant assessment for this category of funding.

4.1: Measurement and data

4.1.1: What are the limitations of the Commission's suggested measures?

4.1.2: What other definitions and data could be used for measurement of inputs, outputs, productivity and impacts in HMR?

As the report highlighted, there are limitations and unknowns relating to measuring impact. There is currently no approved, standardised methodology to conduct impact evaluation of research projects in South Australia. THRF has started developing its own framework and welcome the opportunity to share our initial findings and some decisions that were made to shape this framework, which is designed to accommodate for the evaluation of projects with diverse research types, medical specialties and budgets.

THRF understand that impact is intimately linked to translation, so the framework is being designed with the objective of promoting the translation of the project as a priority. Importantly,
THRF's approach projects as problems (or unmet needs) that require a solution – as opposed to projects designed to publish. In order to implement this, a solid review process should be implemented, with translation specialists involved. A further objective would be to shift the mindset of researchers, who do not appear to plan in terms of translation to help patients but rather further funding and publication.

THRF posit that staying simple is important. Complex formulas with data difficult to obtain is not realistic (and there is currently not enough skilled capital available to process that data in Australia). In many cases, simple data measures can be enough to get the most of the evaluation and impact.

In terms of which data can/should be used for evaluation: depending on the size and nature of the project, THRF propose that a composite of (1) quantitative data (clinical, health system, metrics), (2) economic data (cost benefit analysis) and (3) qualitative measures (narrative) are necessary to view the big picture.

Health Translation SA (HTSA) is investing in the establishment of a data hub that, when implemented, should provide researchers state-wide with access to significant and useful data sets that could be used to conduct impact evaluation. Without the successful completion and state-wide implementation of this project, conducting impact evaluation may remain very limited in SA.

THRF observes that there appears to be an implied consensus amongst researchers that case studies are the best and only way to evaluate impact thoroughly. Qualitative measurements are an important part of the evaluation methodology, however it might not be possible to design one framework or pathway that would work for all research projects. Therefore, it would be valuable to identify consensus models of qualitative evaluation.

For real impact to be evident, a translation plan must be crafted from the outset when unmet needs are identified, and a research plan is proposed. This should also be evaluated and approved during the peer-review process. In many cases, translation is enhanced by involvement of stakeholders in very early planning stages. Lack of community consultation is recognised as one of the biggest barriers to translation. SA is at an ideal population size to inculcate community consultation.

There is an opportunity to agree to a common framework for impact evaluation for SA stakeholders. HTSA should hold a central role in creating such framework.

Actions

- **There is a significant need for a shift in the mindset of researchers. There appears to be a lack of understanding of what impact means. As a consequence of how government funding bodies have historically assessed track record and achievements in the past, researchers have become too publication-oriented and often do not contemplate translational pathways and articulate them on an application form. This shortcoming has a direct correlation with their ability to obtain funding from the Government and this decline will continue unless addressed.**
- **Significantly increase the investment in health economics capacity. There appears to be only one health economics research group in the state, at Flinders University. It appears most South Australian health economists have recently centralised there. Only a few years ago the other universities in SA did have obvious health economics input. It is in the interest of the other two universities to heavily invest in health economics and translation groups to assist in maximum impact driven research. THRF has encountered tremendous interest and need from researchers for such groups to develop all over the state. As long as there is such limited human resources that have the skills to conduct impact evaluation, nothing will change.**
- **Form a collaborative group whose purpose would be to agree on an impact evaluation framework for SA, or at the very least agree to share resources as they create their frameworks would benefit the HMR sector. HTSA is well-placed to coordinate this group.**

5.1 Workforce

5.1.1 What strategies are being used by institutions to attract talented researchers and postgraduates and how successful have they been?

Quantity

South Australia has 12.5% of Australia's research staff but receives only 6.5% of the NHMRC funding. The numbers show that South Australia has a disconnect between the size of the workforce and the NHMRC funding received, bringing into question the competitiveness of the workforce that has been attracted to the State. Competitiveness is **a whole of sector responsibility**. Researchers need to be selected, fostered and supported by their organisations and institutions to enable them to reach the requirements of competitiveness in national funding rounds. Collaboration must be enabled and ensuring appropriate governance, human resource and leadership structures across the sector is vital

to supporting talent. For the critical clinical researcher workforce (Clinical Academics and clinician researchers) there needs to be recognition of the importance of their research contribution and time allowed within their roles to promote participation.

Quality
THRF has also been implementing quality driven funding processes to raise the standard of projects being awarded. This is done by only considering grants for funding that are independently scored as excellent or outstanding (7 or above out of 10). THRF will continue to ensure that only the best prospective research is successful in obtaining funding.
An example of this was in the most recent THRF funding round for project grants with 189 grant applications submitted. Applications were given a final score between 1 and 10. THRF only considered funding projects with scores of 7 and above. There were 97 projects (51%) with a score of 7 and above (Excellent), and only 19 applications that scored 8 or above (Outstanding) which means that 49% of applications were below the standard for funding consideration.

What does this tell us? Based on THRF's scale, only 19 applications stood any chance of being nationally competitive. However, there were 78 project applications that, with more work, greater opportunity, better collaborative outcomes and mentoring could progress to excellent. Is the South Australian system letting those researchers and groups down?

There also does not appear to be an opportunity to attract the very best back to SA by using a higher level financial and lifestyle incentives as salaries appear to be fixed in grids. If there was more flexibility around salaries and lifestyle benefits it could open SA to new significant skills and human resources.

5.1.2 What connections are there between SA Health and university workforces and how do these affect recruitment and retention of HMR researchers?

It is common for clinical researchers to have affiliations to both Local Health Networks (LHN) and universities. For example, a clinical researcher who works 0.5 FTE in a hospital may also work 0.3 FTE for a university and work 0.2 FTE in either private practice or on private research.

This can lead to conflict of interest, confusion and potential governance issues. Clinical researchers tend to prefer to use their multiple affiliations to facilitate the smoothest path to the outcome that they desire from a funding perspective. This may in fact be having an adverse effect on commercialisation opportunities.

5.3 Infrastructure

5.3.1 How well is existing SA public and private HMR infrastructure being utilised?

Currently the infrastructure focus is on the BioMed City Precinct, potentially decreasing the efficiency of the current infrastructure available more broadly in SA.

THRF has knowledge of some HMR infrastructure being used in an efficient and collaborative way. However as an example, THRF recently purchased an expensive piece of equipment for a research group despite the same equipment being available in the laboratory of another team – one floor apart – but not made available due to lack of willingness to share. There is a critical need for whole of sector leadership to foster collaboration, a can-do attitude and limit the intra-sector rivalry evidenced by this example.

5.3.2 Can the competing demands on infrastructure of delivering health care and conducting research be better managed?

The increased use of technology is recommended and is still to be fully exploited. Telehealth has seen a recent increase in investment but could be extended. More collaboration can now be done remotely with close physical proximity not required to imply collaboration. A 'precinct' can now be very diverse geographically and South Australia has the potential to be one large precinct with appropriate leadership and collaboration. The reverberations to limitation on interstate and international travel make this prospect a worthwhile goal.

5.3.3 Can SA do more to leverage precincts to improve HMR performance?

Yes, there is potential for more collaboration between the different institutions involved. As mentioned above, collaboration is possible without close physical proximity. This has become more apparent as a result of the COVID-19 pandemic. With adequate leadership and incentives, precincts could be state-wide with a focus on performance KPI's, even with minimal further financial investment.

5.4 Collaboration

5.4.1 How important is collaboration to securing research funding and to the achievement of HMR outcomes – both between researchers and between research institutions and industry, nationally or globally?

Collaboration between all stakeholders is pivotal to secure research funding, especially considering the increasingly competitive environment in the field. It may be worth implementing a new requirement for South Australian researchers wishing to secure funding that they must demonstrate collaboration state-wide and across institutions, perhaps using a re-purposed SAHMRI as the facilitating centre.
Research with a focus on translation of research findings is more likely to secure funding and this cannot be achieved without collaboration between institutions.

5.4.2 Are current levels of collaboration by SA researchers/institutions optimal?

Clearly previous responses in this submission indicate that THRF does not believe the focus on collaboration is at the basis of all decision making at a corporate or institutional level. As an external funder and observer, THRF is in a position to reflect that the current structure of

research in SA does not promote enough real collaboration to provide confidence that SA could achieve optimal results from its opportunities without a considerable change in focus and operational activity.

5.4.3 Has the performance of SA Government departments helped or hindered collaboration in the state's HMR sector?

See THRF's comments about the approach to governance of the Bio-Med City precinct and lack of real collaboration. Additionally, comments about the use of HSCGB Funds. Both areas can be significantly impacted and improved by state government intervention.

5.4.4 What steps could be taken to enhance collaboration amongst research institutions, including universities, and between research institutions and industry?

See THRF's response regarding SAHMRI and the Bio-Med city in 3.1.3.

5.4.5 Are there innovative models of collaboration which could be adopted in SA?

In general, current levels of collaboration between individual SA researchers are very good, both within the state and interstate. This has again been confirmed at the time of the selection by independent assessors for THRF's recent project grant round.

On a recent trade mission to Israel, collaboration with maximum impact was witnessed across multiple institutions and government sectors. This model has application in SA with the correct focus.

On the other hand, the level of collaboration between institutions in SA is not optimal. Currently, institutions make decisions in their own interest but not for the benefit of the state. The institutions can justify this approach by making whole of state improvement incumbent on their own success, but this is an insular approach and will not achieve an optimal outcome for SA. In other words, we have good leaders, but we lack good leadership.

<u>Collaboration driven by vision: financial security vs. impact</u>

From an independent funding body's perspective THRF's stakeholders want impact in the community, driven from funds provided. THRF's stakeholders are not interested in making sure a researcher has a job, nor are they are interested in funding sub-standard research.

Often applicants for THRF funding have not been able to show that they have thought through the potential translation of research findings, possible process to commercialisation or why the research project is relevant at all to community health progression.

Consumer engagement is an important step to integrate during the research design. While a significant effort is currently being put into this area, the only state-wide independent organisation for consumer engagement in healthcare (Health Consumers Alliance of SA Inc.)

lost its government funding in early 2020 and is struggling to survive and provide much needed service and advice. Most institutions in SA are currently organising their own consumer engagement groups which is a great initiative, but a pattern of fragmentation, duplication and lack of collaboration is evident. It is the state government's responsibility to provide incentives, financial or not, for institutions to talk to each other and maximise resources.

From the institutions' perspectives, the vision about consumer engagement is driven by the fact that it is now a box to check in order to receive federal funding. While they are responding to that incentive, they miss out on the opportunity to organise this collaboratively with the support and leadership of the state. How will this affect SA's ability to unlock federal funding? Considering the importance this specific topic is taking, it will likely affect the states outcome.

Collaboration between universities

In truth, most of the medical research undertaken in SA is via the universities as an Administering Institution (AI) (the LHN's bureaucratic weight being a deterrent, researchers who are LHN employees often choose to administer their project via a university if they can). The three principal universities (The University of Adelaide, University of SA and Flinders University) are fierce competitors towards each other which is commercially understandable. However, as Warren Buffet often states, *'the rising tide floats all boats'*, and the universities could achieve more by collaborating in a multilayered and multifaceted way. The universities compete in the South Australian sphere, often ignoring to their detriment about national and internal competitiveness.

For example, as a funder to the university sector THRF aims to have a single funding agreement template. However, each University tries to influence the funding agreements. As the result of this, as a major funder to the sector in SA, THRF must continually argue with university lawyers over minutiae (in many cases simply personal preferences rather than legal doctrine). This aspect in one of the most frustrating aspects of the initial involvement with the university sector from a funding body's perspective.

In 2019, THRF tried to initiate a collaboration between the three universities and itself, following an international trade mission where representatives of all institutions were present. Part of the collaboration was that all institutions would financially contribute to the projects. The focus of the collaboration would have been to address unmet needs in patient care. The problems would require a multidisciplinary research team to be established but would be addressed and translated in a few years and potentially leading to IP and commercialisation. Although promising and carried by people with good intentions, the initiative fell through after the first meeting, with each representative not having the flexibility to commit their institution to this type of innovative collaboration which works so well in other jurisdictions..

Health Networks

The health networks are now organised in four city-based health networks (CALHN, NALHN, SALHN & WCHN) and effectively seven country health networks (which includes six country

networks and the central support network). In some other jurisdictions there would be one city-based health network for the same population size instead of four. The consequence is once again lack of cohesion and fragmentation from a research outcome perspective. Engagement with health networks depends on which network you deal with, which staff are in their roles and how skilled they are. There is also the impact of rapid staff movement in the bureaucracy which has the effect of losing corporate memory from the roles. Ethics approvals are often slow and the bureaucracy is burdensome.

However, the health networks have access to the patients and also represent the patients' interests more so than other AI's. Additionally, they have the ability to be closer to the problem and the impact than other AI's. SA Health is very much focused on community wellbeing and has the greatest ability to encourage outcome-based research and collaboration. In that sense SA Health affiliated researchers often do understand the importance of translation of outcomes. It is a shame that their structure creates unnecessary barriers.

5.5 Funding

5.5.2 What challenges, if any, do SA researchers/institutions face, compared to other jurisdictions, in securing Australian Government research funding?

The competitive nature which pervades between the three SA universities and SAHMRI for funding could be impeding SA from achieving a greater share of federal funding. In previous comments THRF has posited that a more formalised approach to collaboration with a reconfigured (and not competing SAHMRI) as the jointly owned facilitation centre may assist to achieve a greater outcome for SA.

5.5.3 Other than the Australian Government, how do universities and research institutes source funding for research?

Universities and research institutes engage with Non-Government Organisations (NGOs) such as THRF heavily in SA as they are a significant source of funding for them. Researchers apply for our competitive grant rounds but also frequently contact us personally to enquire about strategic funding. The number of enquiries for strategic funding has increased recently, likely due to federal funding being more difficult to access in SA. Non-Government Funders are more flexible than the Government and can provide funding that would otherwise not be available. For example, it is common for a researcher to seek funding for consumables only because they were awarded a grant for a project than only covers the salary, or vice-versa. Some pieces of equipment or infrastructure are also a common request with little or no effort made to identify whether the equipment may be available for loan or share elsewhere in the state.

THRF occasionally provides lump sum grants to some institutions/individuals, to be spent however they need (e.g. equipment, leverage money, creation of a new position within the organisation for one year etc). These leverage type challenge grants may otherwise difficult to obtain without THRF or other private support. THRF also provides Fellowships and large

grants that contribute to the emergence of new leaders in the state (e.g. THRF allocated $5 million in 2019) for 16 Early and Mid-Career Fellowships.

Travel grants are another good example of funding provided by an NGO that has a lot of value for money. In 2019, THRF was inundated by travel grant requests. It seems that researchers had no place else to turn, with the Government removing travel as a budget component from their grants and limited availability of university travel grants available. THRF provided 56 travel grants for a total of $125,000 in 2019 alone. Travel is an essential part of a researcher's career and researchers in the state have minimal support to disseminate their work, which has a direct impact on their performance and ability to collaborate. Although THRF appreciates that the travel grants provided had value for money, it feels that it is compensating a major flaw in the HMR system and that it is not its role to do so. If THRF decides not to provide travel grants anymore, how will researchers be able to disseminate their work to the international HMR community?

There may be an opportunity to engage with other NGO funders as commercialisation or equity partners rather than simply funders. This would have the effect of fully engaging the NGOs into longer term funding arrangements, but with closer governance on process measurement. Where THRF and other NGOs could reach agreement early in the funding cycle about commercialisation potential and establish an agreement about future funding and equity share.

5.5.4 What barriers, if any, are there to industry involvement in HMR? How important is industry involvement to success in securing research funding?

There is a shortage of experience with successful commercialisation and industry partnerships in SA. There are not enough people with successful experience who can use their knowledge to maximise the investments being made.

Researchers need support to develop industry and commercial partnerships and secure funding (whether grant or equity). Researchers are not trained to have a business mindset and further assistance is required in this area in SA.

The Government and universities can be too slow and bureaucratic for the industry who want to get things done more quickly. THRF has recently had some very poor outcomes when dealing with the university sector for industry directed research.

Industry involvement might not be necessary to secure research funding for many research projects, however it is very important for some and is a worthwhile investment that can be lucrative so it should be encouraged. Partnerships with the industry are a necessity to push forward projects and bring outcomes for the community.

THRF has recently been experimenting with grants to the university sector that have an industry focus. More specifically, THRF identifies the problem or research initiative and negotiates with the university about the best method to have the research undertaken. THRF has experimented with three different modes:

1. Industry project with scholarship (project identified by THRF, researcher identified due to industry experience and knowledge);
2. Complete transfer of responsibility to the university (akin to traditional grant funding);
3. Become a facilitator of research projects within an in-house institute structure.

Whilst there are other possible models, these are the three THRF focussed on.

The first has been a frustrating process, with a lack of understanding or appreciation from the University about what skills are required to effect an outcome, a lack of appreciation for industry focus, and an overly bureaucratic model prequalification. To be fair, THRF probably underestimated the universities bureaucracy and requirements. However, it should not be as hard as it has been made and it is clearly an opportunity for improvement.
The second example has been a success from an impact perspective, however the ongoing viability is contingent on the external funding that THRF currently provides. The program should potentially be able to stand on its own financially but may need minor ongoing support. The third has the most potential, this is largely because THRF can separate itself from any one bureaucracy and provide a facility and vehicle for true industry collaboration.

In any case, in the medical research and wellbeing sector the universities have a long way to go with many opportunities and models to explore.

5.5.5 What steps could be taken to facilitate more industry investment in HMR in SA?

THRF believe there are five key steps required to facilitate this:

- Provide training and support for researchers to develop the skills required to navigate the industry and a business mindset.
- Bring people with collaborative experience to the state, help them share and teach and give them flexibility and leadership positions. This should lead to teams that can support researchers.
- Look for leaders from a commercial background and not necessarily a research background.
- Where possible and needed, reduce the bureaucracy.
- Improve the quality of project applications and collaborative nature of projects: create multi-institutional collaboration and pool resources across multiple entities.

5.6 Translation of research

5.6.1 Is there potential to enhance translation of SA based research into health care policy and practice in SA and how can this be realised?

There is potential for South Australia to pave the way in translational health research. This requires more investment from the Government and other institutions who need to make translation a priority. Currently the focus is on the next grant in order to stay afloat. Outside

of tangible recommendations that can be provided, what really needs to happen is a cultural change.

The translation of research findings suffers from a tension between South Australian priorities (carried by SA Health) and being competitive worldwide (carried by universities and research institutes). Until this tension is resolved, translation is unlikely to become a higher priority.

There are many leaders qualified and willing to promote this change in the state in all institutions and levels. What is needed is unbiased leadership to materialise it.

How could this be achieved?

- Provide financial and non-financial incentives (time, support, training, mentorship, etc.) to researchers to promote translation and a cultural change.
- Invest in consumer engagement: this is where translation starts, at the beginning.
- Think bigger: a project should be translated across the entire state, not only one local health network or university. THRF frequently encounters this situation. Enable such translation across institutions by appointing leaders who are empowered and enabled make it a priority.
- Funders to continue to take responsibility to promote and incentivise translation.

Health Translation SA (HTSA)

The centre and staff are an excellent vehicle and are working hard to make needed changes. However, the team is relatively small, and their funding limited. More investment is needed.

Because it is located within SAHMRI, without a re-purpose of SAHMRI, HTSA may be being viewed as a competitor. This has been highlighted in previous comments, because of this scenario, the centre might still suffer from negative perception by part of the research community, despite its efforts. Some work is needed to either rehabilitate its image or relocate it in order to start fresh, otherwise this might be an insurmountable problem.

5.6.3 What opportunities are there to increase commercialisation of HMR in SA?
5.6.4 What barriers, if any, are there to commercialisation of HMR?
5.6.5 What steps can be taken to remove or reduce these barriers?

Need for leadership and a collaborative model

There is currently a lack of leadership and little in depth, multi-institution collaboration for commercialisation objectives. Institutional biases prohibit people at all levels to feel comfortable collaborating fully.

On the whole commercialisation in the South Australian health sector has underperformed, other than a couple of notable exceptions (such as Hopwood). Uni SA has been successful

through its Uni SA Ventures Company, although it was a limited success in health. AusHealth (a wholly owned subsidiary of CALHN) has had success over the years.

This is an area where outcomes driven by collaboration should be more achievable. However, leadership is the key. Commercialisation is the first area where we have great opportunities to realise high level outcomes via collaboration.

Israel's model of collaborative research and commercialisation should be examined. Unmet need problems are first identified in the hospital, followed by the university, research institute, industry and other institutions involved putting together a multidisciplinary team to solve the problem. There are a number of documented examples where significant new medical outcomes and commercialisation income has been generated. Israel has many examples of the benefit of unfettered collaboration providing mutual benefit to all parties.

In order to resolve issues around IP and commercialisation revenue which appear to be a significant bottleneck preventing collaboration, the universities, hospitals, SA Health and other institutions must find a 'trade-free zone' (everyone goes in and takes out equally) and trial several flagship projects where commercial objectives are all achieved equally.
A good inspiration and starting point could be the AusHealth Lite agreement.

Multiplication of commercialisation entities

Currently CALHN owns AusHealth which has responsibility for the commercialisation of research sourced from CALHN. NALHN is still yet to announce its commercialisation partner and SALHN has its own commercialisation protocol. The universities have their own internal structure and SAHMRI has its own commercialisation department. This is all in a state with a small population.

Perhaps investigate global best practice models in similar demographic jurisdictions.

5.6.7 How is HMR effort split between basic and applied research in SA?

THRF is in a reasonable position to respond to this question.

If "basic" research is defined as laboratory-based or pre-clinical research and "applied" as clinical research and public health, health services research: at THRF's last project grant round, 51% of applications submitted were for basic research and 49% for clinical/public health.

Considering all THRF research projects are funded from competitive grant rounds, THRF currently funds 40% basic research projects and 60% clinical research/public health projects in terms of volume (number of projects). However, in terms of the amount of funding, the basic research projects take 49% of the overall amount and the clinical research/public health projects 51%. Overall from THRF's perspective, there seems to be an even split between the two types of research.