

Submission to the South Australian Productivity Commission Draft Report of Inquiry into Health and Medical Research in South Australia 2 September [2020]

by

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[Submission comments are inserted under each term of reference]

1. Assess the performance of health and medical R&D in South Australia, including a comparative analysis of South Australia's share of national grant funding benchmarked against other jurisdictions, with particular reference to how health and medical R&D in south Australia:

- a. Fosters innovation and improvements in health care service delivery that lead to improved health outcomes for the community and provide cost savings to the health system.*

Since 2000, health and medical research and development in SA has not kept pace with national health goals and particularly fallen behind in accessing new funding from the Australian Government, philanthropic 'foundations' and commercial investors to pursue innovations that deliver health outcomes.

This is despite encouraging outcomes from South Australia in the 1990's of coordinated research programs that showed promise of delivering community health outcomes at reduced overall cost to the health system.

In the first decade of the 21st century the Government of South Australia did not continue a health outcome policy in concert with the Commonwealth initiatives where grants and incentives were oriented towards health outcome programmes that would lead to a reduction of overall health costs. Consequently, health and medical [H&M] research agencies in SA focused on pursuing research that was funded through competitive Government grants whose aliquot for competitive 'free-flowing' research was relatively diminished in favour of government investment in research to improve community health outcomes.

Nevertheless, the networks and relationships that previously existed and received Commonwealth funding that resulted in improved health [and financial] outcomes in specific regional populations remain in place, as does the infrastructure to achieve this outcome. The crucial participants in these networks are regional primary care groups [GPs], associated hospital and government health care agencies and universities. A central coordinating agency was essential for coordinating the interactions between participants and monitoring progress of groups in achieving designated health outcomes. This group was disbanded at the conclusion of the Commonwealth -funded trials, which resulted in additional items being added to the Medicare funding schedule to maintain the momentum which arose from these trials.

Unfortunately, the uptake of these new medical benefit items has not resulted in the expected outcome from the Commonwealth investment nor in the translation of newly funded items into improved or community health perspective.

Reasons include inadequate provision of individual patient data held by the Commonwealth to primary care practitioners, scant undergraduate medical training to enable students to work within a health improvement framework, provision of information for GPs about clinical systems that could utilize a comprehensive data base for patients in practitioners' care [aimed at achieving improved outcomes for their patients], and a failure of H&M research agencies to embrace health outcomes in their research strategies which seemed to focus on gaining more research funds from competitive grants.

The national infrastructure to achieve community health improvement and contain health costs has been substantially upgraded with the provision of "My Health Record" and new primary care items for funding. Improvements in community health can only be achieved through state health systems which control public hospitals and community health agencies and cooperation of primary care providers [GPs].

South Australia is well placed to take a leadership role in implementation of a state-wide community health improvement strategy because of its past history of

successful trials in improving population health, the existing primary care networks and their on-going interaction with Health Department hospitals and community centres.

No other state jurisdiction is better placed to demonstrate how the Commonwealth investment in comprehensive health data through My Health Record and the Medicare primary care item numbers for general practice can be integrated into a whole-of-state health outcome strategy. There will be productivity gains not only in reducing the burden of illness and costs of health in SA but also in exporting the systems, know-how and products required to achieve this outcome.

The Productivity Commission has the opportunity to re-set the metrics for measuring M&R research productivity so that research for health improvement can flourish.

These metrics include incentives for H&M agencies to progress from a focus on basic research by identifying the findings of basic research that can be taken to translational [goal directed, proving-up] research and then onto population outcome research. This aspiration should really be a central component of institutional research strategies and the Commission is in a position to monitor the effectiveness of research agencies in directing their research along this path.

This monitoring role would suit a re-tasked SAHMRI.

Improved health outcomes for the community depend on research that underpins a whole of Government commitment to achieve this outcome. Central to this aspiration is a recognition that the costs of health are determined by the burden of illness and that strategies which reduce the burden of illness result in improved community health outcomes and provide savings to the health system.

b. Encourages staff development that promotes high professional standards and supports recruitment and retention.

This long- term goal requires undergraduate, post-graduate and on-going professional training and re-training to keep high professional standards and be abreast of evolving developments in research.

2. Identify and assess the key factors influencing the level of public sector (including universities} and private sector health and medical [H&M] research output and activity in SA including:

a. Talent and capacity to attract new talent.

In South Australia there are sufficient numbers of professionals to support the goals outlined in 1 above. The health profession attracts people who are motivated to achieve improvements in community health; once it becomes apparent that this is occurring, recruitment of suitable candidates is enhanced.

b. Industry structure and composition

A separate submission will be made to the commission if the commission requests details.

c. Funding, including Australian Government funding

Improving population and community health is a primary aspiration of the Australian Government which is recognized within all categories of their funding: basic research, translational [goal directed] and population outcome studies. The MRFF and NHMRC are substantial sources of this funding but there are additional Australian Government research funds directed towards improving population and community health outcomes. These include competitive grants in nominated areas [e.g. general practice/primary care, special populations [childhood cancer], Cooperative Research Centre [CRC] grants that include health research and many more.

In general, the proportion of Australian Government research grants directed to improved community health is expanding and this causes NHMRC competitive grant funding to be held steady in an environment where the costs of such research are escalating markedly.

In addition, the Australian Government is directing research and development funds to both health infrastructure and health service delivery.

Important additional sources of H&R research funding are: philanthropic organizations, industry and 'foundations'. In general, these are national and international funds that are directed at specific purposes, populations, and goals.

Examples include Wellcome, Gates, Rockefeller, national anti-cancer and cardiovascular research funding agencies as well as industrial organizations associated with pharmaceuticals, devices and diagnostic tests.

The proportion of these funds that come to South Australia is substantially less than received in other Australian jurisdictions.

Further funding comes from local or regional sources where the recipients of funding are confined to specific institutions or a limited range of individuals. Such funding is usually small in aliquot and duration; depending on the criteria for allocation of these funds, they can assist in quality research or engender mediocrity.

Access to data; regulation affecting access to data: and efficiency of collection and acquisition.

Although there have been bureaucratic barriers to acquiring data, the existing regulations allow for sufficient data for population studies as well as discrete institutional studies. Privacy provisions allow the collection of de-identified data for population studies which is sufficient. In the case of individual institutional studies, institutional ethics committees have presented barriers in the past, but generally seem to be coordinated at present.

d. Connectivity of the Biomedical and the planned Flinders precinct.

I have no specific knowledge of this initiative but in general the integration of biomedical and health research is crucial in this age of digitization and AI. I know that Flinders biomedical engineering has several translational research and development projects that are in a position to be assessed in the FMC environment and the Flinders College of Medicine and Public Health

e. Potential for greater connectivity between the Local Health Network medical workforce and university recruitment.

This remains an area of potential, providing there is goodwill from both universities and government. The history is chequered since the Bright Report that recommended that a 'southern' medical and health facility be established in association with a university and medical school so that health system developments could be led by research. This resulted in the building of FMC and establishment of a second medical school in SA where the heads of academic departments in the medical school should be appointed by the university [in conjunction with the hospital] and each department be responsible for patient service, teaching and research.

This in fact occurred with the initial appointments of department heads as academic appointments [with academic salaries] but the proposed amalgamation of university and hospital budgets never occurred, so that engendered an on-going problem which remains throughout the state at both universities and all teaching hospitals.

Over time there have been negotiations with both parties [Medical academics and Hospital salaried staff] that has resulted in a complex web of private practice entitlements, research entitlements and differential salary reimbursements.

Generally, groups have come together in some circumstances to pursue research that has produced advancements in health care that have resulted in improved health outcomes, but few have survived to provide enduring benefit. Largely due to decisions by either hospital or university to withdraw funding, fail to re-fill vacancies or decide that the topic of research no longer has priority for a particular partner agency. An example is in reproductive health at the amalgamated Women's and Children's Hospital.

These perturbations were most apparent around the financial stringencies of Government [ref 1] and resulted in the research initiatives around 2000 which resulted in the establishment of SAHMRI as a co-ordinating agency for diminishing competitive national resources but no strategy from Government to facilitate the crucial coordination between health facilities and university research directed towards improved health services.

f. Integration of research partners with SA Health

Providing Government creates the goal of improving community health through research and SA Health is committed to a partnership approach which embraces primary care [GPs] the stage is set for achieving the community outcome goals.

3. Identify and assess existing collaboration on H&M research between research organizations --- and linkages with industry. Identify examples.

PMcD is not in a position to provide this information

4. Identify increased opportunities for commercialization of H&M research in SA

Discussed under ref 1a and “incentives for productivity “ in ref 5.

5. Identify and assess measures of productivity and impact of research activity [including key areas of research] , SA’s share of national funding ... such as MRFF, performance of publicly funded research organizations in SA compared to other jurisdictions , including overseas.

The Commission has focussed on measuring productivity of state investment in H&M research by reviewing competitive grant incomes – in the main. It is submitted that there are more ways of measuring H&M productivity than grant income and commercial spin-offs.

For purposes of discussion, H&M research is classified thus:

5.1 Basic research productivity is measured by grant income, citation indices and patents.

5.2 Translational Research Productivity is measured in terms of income received for conducting the assessments, the success of the trials in taking products to production and eventual wide application in health provision.

5.3 Population research is measured by health outcomes. These parameters are well developed by the Australian Governments [Medicare, Australian Institute of Health and Welfare, Costs of provision of health care, My Health Record]. Industry measures the success of their products through their balance sheets. Such industries are subject to ACCC oversight.

The major benefits from achieving improved population outcomes are: reduction of the burden of illness in the population, a reduction in the cost of illness management [80%+ of overall health costs] and an increased sense of well-being in the community – which underpins productivity generally.

Incentives for Productivity in H&M research

Successful and enduring programmes in H&M research are distinguished by the sponsoring [usually funding] organization adopting a policy and/or goal which underpins their investment in H&M research.

Examples include drug and equipment manufacturers who invest large sums into product development areas; often this investment is directed to basic research groups that have discovered a new molecule or process that these manufacturers consider likely to satisfy a market need.

Increasingly, national governments and global organizations are investing in initiatives that will achieve major improvements in health outcomes and reduce the burden of illness.

The major investors in improving health outcomes are Governments seeking to improve whole-of-population health and reduce disease burden, both of which [if successful] reduce the overall expenditure of governments on health services.

The major costs of health services are 'tertiary' hospital care and costs of treatments for chronic preventable diseases like cardiovascular disease, diabetes, cancer, mental illnesses, etc.

To a large extent the success of 'curative' medical advances has brought about treatments that are preventing early mortality and morbidity, and allowing people with cardiovascular and other chronic conditions /diseases to live longer, and this uncovers a raft of other complications and conditions that are adding to the burden and cost of disease.

Improving population health outcomes is the major strategy that has been shown to be most effective in gaining improved health amongst large populations and reducing illness burden. In turn this reduces costs of tertiary care [hospitals] and overall productivity.

There are also global examples of population health improvement investment strategies like UN investments in 'global' funds to eradicate specific burdens of illness [COVID-19, HIV/AIDS] and philanthropic foundations like Gates, Rockefeller, and Wellcome who direct investments to remedy burdens of disease globally to reduce specific disease burdens in under-privileged countries.

6. Identify and assess the characteristics of South Australia and its population that may give rise to areas of competitive advantage to other jurisdictions in H&M R&D, and identify methods of maximizing these opportunities.

South Australia has arguably the most comprehensive system of medical care amongst all Australian jurisdictions. There has been a long-standing oversight of population health through the Health Atlas and social demographics which identifies populations most in need; credible efforts have been made to embrace these populations with a greater level of success than other jurisdictions where populations are larger, the primary care [GPs] less cohesive and the organization of central Health Departments more remote from major hospital and community health services that are managed in regions.

Whilst arguable, the history of education and research in agriculture, mining and medicine/health which commenced early after establishment of the colony of South Australia fostered an ethos of research which underpinned productivity in these areas that lasted until after the Second World War.

Research in health and medicine in South Australia gave rise to a surprising number of South Australian researchers and health leaders who ventured to WA [Neville Stanley], Queensland [Gordon Heaslip], Sydney [Ruthven Blackburn] where they established major research initiatives and stimulated the growth of Commonwealth and state health departments around the country.

In the 21st century this SA prominence has diminished but the management of SA health remains firmly in the hands of a competent central health authority.

[PMcD's personal observations of working closely with Commonwealth, Vic, NSW, WA, NT and Queensland health departments on national programs

indicates that SA is best placed of all jurisdictions in maintaining a whole-of-population approach which provides accessible provision of health services]

The size and multi-racial diversity of the SA population is sufficient to warrant a complete suite of health services that provide for the majority of diseases and has built up the modern infrastructure, communications and information services to facilitate all-of-state initiatives in health.

The development of primary care GP networks with Divisions throughout the state has led the way in community health research that has contributed to improvements in health outcomes now funded through Medicare.

Whilst there have been challenges and problems along the way to achieving this degree of cohesion, the networks in other jurisdictions have mostly been fraught and poorly coordinated at a state level.

7. Identify industry needs and current barriers to undertaking H&M R&D in SA and identify models to facilitate industry health and medical R&D in SA.

If requested by the commission PMcD can provide details of examples of examples nationally and internationally, but it is expected that senior official and academics are well aware of many such examples.

8. Recommend action that the SA Gov might take to :

- a. Increase the state's share of Australian Government funding for Health and Medical Research*

Get the incentives right

The ingredients for achieving improved population outcomes are all types of research [basic, translational and population directed], systems for measuring population health outcomes and monitoring the progress of research that is directed towards health-outcome improvements.

The Productivity Commission can play a pivotal role in this initiative by urging governments to enunciate an all-of-government goal of improving health of the state population through H&R research that is directed to achieving health outcomes.

The Commonwealth government has stated this goal explicitly by directing funds toward improving health outcomes by way of earmarked competitive grants, infrastructure developments, primary health care [GPs and community health] and price signalling through provider payments under Medicare that are for 'coordination and outcome improvement' .

The Commonwealth has invested substantially in health infrastructure and an increased range of services directed at improving health outcomes, but to date they have not seen the returns they hoped for, especially in relation to primary care embellishments like My Health Record and new item numbers under Medicare.

The Commonwealth objective of improving all-of-population outcomes is falling short of expectations partly because the solutions and implementations are the responsibility of State Governments and related agencies [dominantly universities and research institutes] that have the operational capability to deliver this lofty goal. The activities of these research agencies is not reflected in policies or strategies to achieve a whole of government goal; their research strategies are focused on small programs with short-term specific goals – often aimed at getting competitive grants.

There is no explicit process within these organizations of considering the health impact of grant applications at the time of submission nor reviewing citation indices to ascertain which research outcomes have potential for being translated into health improvements or commercialization.

- b. Increase the scale and productivity of publicly funded and public health medical research Institution R&D as well as private sector R&D.*

- c. Increase the impact of H&M R&D activity on the state's economic growth.*

The Productivity Commission is in a position to reset the metrics for government investment in H&M research which will place institutions in the best position to gain research funds for H&M – providing they direct and coordinate their research towards this goal.

Thus, there is a role for the South Australian Government to enunciate a goal of population health improvement and create incentives for universities and research organizations to undertake H&M research that is directed towards whole-of-population health outcomes. The South Australian Department for Health and Wellbeing has a vital role in facilitating coordination between primary care providers [GPs] and hospitals.

9. Recommend changes to the structure, governance and operation of publicly funded health and medical research and development to increase research output, productivity and translational impact.

The Commission is proposing three options for improving the productivity of H&M in SA.

I believe that merely re-organizing existing organizations into different geographical and organizational precincts will only deliver more of the same. I recommend leaving existing organizations in place and changing the metrics and incentives for them to coordinate to achieve population and community health outcome goals.

If the SA Government adopts a Health Outcome Improvement Strategy and sets achievable goals for research, this is possible.

The major players are the South Australian Department for Health and Wellbeing and all its agencies, the universities, the Primary Health Care providers [GPs and others] and community representative groups.

Substantial productivity gains will accrue when health outcome targets are achieved by reducing the burden of illness and engaging the community and individual patients in achieving those goals

A crucial element in this strategy is an organization that can function as the 'Health Intelligence Unit' which reviews all health service provider data against specific population outcome data achieved, and informs both providers and Government about the extent to which health and financial goals are being achieved.

This organization would need to be "arms distant" from both government and private providers, and measure research outputs from agencies undertaking H&M research and development. SAHMRI is ideally placed to undertake this role, and with SA Government support there is an opportunity of convincing the Medical Research Future Fund to invest in a large-scale project like "Improved Health Outcomes for the Community"