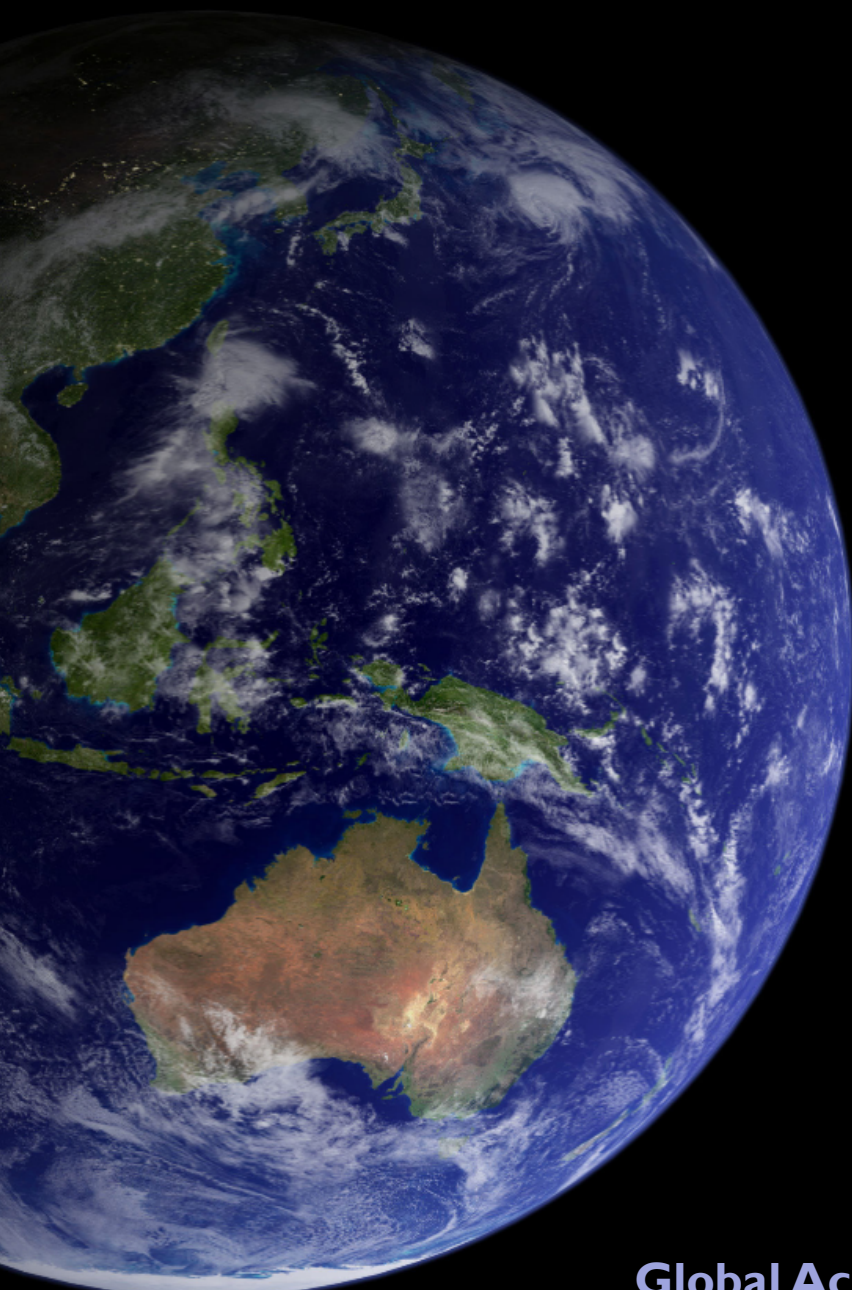


GAP & IIER-A National Resilience Project

The Australian Healthcare System

‘Just in time’ or ‘Just in case’?



Final Report

December 2020

**Global Access Partners
Institute for Integrated Economic Research Australia**

This report provides a high-level overview of the resilience issues in Australia's Health system that have been highlighted by the COVID 19 pandemic. It is one of the products of the National Resilience Project (<https://www.jbcs.co/iieraaustralia-projects>) being co-led by Global Access Partners and the Institute for Integrated Economic Research-Australia.

The report would not have been possible without the support and assistance of a broad range of Health sector experts who participated in the series of four workshops and in a range of interviews in 2020. We would like to thank all of those who contributed to the report.

The report authors are Dr Simon Quilty (*Fellow IIER-A*), Anne Borzycki (*Director IIER-A*) and Air Vice-Marshal John Blackburn AO (Retd) (*Chair IIER-A*).

The workshop participants included those listed at Attachment 1.

Global Access Partners Pty Ltd, Institute for Integrated Economic Research Australia Ltd, 2020

Title: The Australian Health System: 'Just in time' or 'Just in case'?, December 2020



The report is released under a Creative Commons Attribution 4.0 International Public License (CC BY 4.0), <https://creativecommons.org/licenses/by/4.0/>

Copies of this publication can be downloaded from www.globalaccesspartners.org

Global Access Partners Pty Ltd

ACN 000 731 420

ABN 74 000 731 420

PO Box 978 Strawberry Hills NSW 2010 Australia

+61 2 8303 2420

info@globalaccesspartners.org

DISCLAIMER: This report was informed by the proceedings of the Australian Healthcare System workshops held as part of the Global Access Partners (GAP) and Institute for Integrated Economic Research Australia (IIER-A) National Resilience Project. The report represents a range of views and interests of the individuals and organisations participating in the workshop. They are personal opinions that do not necessarily reflect those of the organisers and sponsors of the GAP/IIER-A National Resilience Project.

THE AUSTRALIAN HEALTHCARE SYSTEM

‘just in time’ or ‘just in case’?

“Unprecedented is not a reason to be unprepared ...

We need to be prepared for the future.”

Australian Royal Commission into National Natural Disasters Arrangements

Report 2020

EXECUTIVE SUMMARY

The Coronavirus pandemic has exposed a global lack of resilience as a result of a collective failure to assess and act on national risks and vulnerabilities in the face of a rapidly changing world. The pandemic has also exposed both unrealistic social expectations and political leadership shortfalls in coming to grips with the crisis, as opposed to managing prosperity. The erosion of faith in, and effectiveness of, domestic and international institutions has also been under the spotlight as a result of the pandemic.

Australians have been complacent with respect to the significant exponential changes occurring in the world and our growing lack of national resilience. We have reacted very well to the pandemic; but were we adequately prepared for this or a range of other significant risks that have either already manifested or could still eventuate.

Australia has a world-leading universal healthcare system, the foundations of which came from the 1953 National Health Act that was based on the principles of equity of access to healthcare for all Australians. However, missing from this Act, as well as from other core aspects of legislation, systems and governance in Australia, is the concept of resilience and sustainability across the entire healthcare sector.

The pandemic has brought into sharp relief the inadequacies of Australia’s healthcare system in the broadest sense. The professionalism of our health practitioners has been extraordinary; however, the problem does not lie with them. Rather the ‘health system’ has been found wanting. We lack resilience because we do not adequately prepare for such predictable events. For example, we have experienced medicine shortages, supply chain disruptions, loss of domestic manufacturing capability, tribalism and cultural impediments to teamwork and Federal versus State governance disconnects. These systemic failings are discussed in this report.

This report is framed by the biomedical provision of western healthcare; however, it should be acknowledged that supply of goods and services to facilitate equitable access to housing, energy, food and water are fundamental to the health and wellbeing of all Australians, and that focusing on equity is a most effective way of improving public health.

The principle of “equity of access to healthcare for all Australians” has slowly unravelled as inequity more generally has increased across Australian society over recent decades. This decline was not the result of one single policy failure or event, rather a gradual disintegration of Australia’s social contract as the influence of free-market ideology seeped into every aspect of our lives. Our healthcare system was not immune to the impact of this ideology.

The “just in time” free market philosophy may have resulted in cost efficiencies, but it has also resulted in significant erosion of healthcare systems resilience as our nation gradually lost manufacturing capacity to the point where we now import more than 90% of our medicines and virtually all of our Personal Protective Equipment (PPE), whilst at the same time having no stockholding mandates. Lower cost can come at a very high price in a crisis.

We need to determine how we better react, prepare for, adapt and where feasible, prevent disasters and crises, such as those we have experienced throughout 2020. We should not try to replicate the pre-COVID-19 Australia in the recovery. We need to capitalise on the many positive aspects of our response, such as the social solidarity and the Federal / State political collaboration initially displayed in the early stages of pandemic, and learn from the negative, such as the fragility and opaque nature of our supply chains and the lack of preparation in critical areas such as in our health infrastructure and parts of our economy.

The contraction of the global economy that has followed the pandemic, combined with other emerging global crises such as climate change, will require us to reshape Australia’s healthcare system to ensure it can withstand a range of future shocks. There needs to be a renewed focus on resilience in healthcare that recognises its central role in the security and wellbeing of all Australians. A resilient health system cannot be based on a “just in time” philosophy; there must be a degree of “just in case” thinking to deliver a balanced and resilient system.

Whilst there is this need to reshape our healthcare system, there are fundamental blockages to building resilience, even though the knowledge and expertise to make this shift already exist across the healthcare sector. We need to listen to our experts, not just during a crisis but in preparing for the next one. We need to identify those elements essential to ensure the health outcomes needed by Australians and then, cooperatively and collaboratively, determine how they are to be realised and maintained.

The vast majority of people working in the healthcare arena are overloaded in dealing with daily issues and reacting to each crisis as it occurs, without assessing the broader horizon of opportunities and threats. Most do not have the time available to plan to prevent adverse health threats. The most complex issues regarding Australia’s healthcare system are related to the structure, governance, culture, economics, and workforce which are managed in stovepipes in a disaggregated system with little capacity to address future resilience and preparedness issues.

Given the propensity of the Federal political level to market success stories and dismiss discussion of risks and vulnerabilities for short term political gains, the leadership will need to come from those in our nation who are actually delivering healthcare to our people. That is at the State/Territory Government and at Hospital / Industry levels. A willingness to act together for the common good to achieve shared goals can only be built through practice and demonstration. We need leaders at these levels to demonstrate this willingness to work together and then to act.

Our politicians have rightly applauded our nation’s health workers outstanding performance and dedication to their duties throughout the pandemic. However, plaudits are not enough. We, as a society, owe it to our healthcare professionals to do whatever it takes to enable and empower them to do their jobs, to ensure our healthcare system is genuinely resilient. The health and wellbeing of all Australians, and therefore the security of our nation, depend on it.

INTRODUCTION

This report addresses the resilience of Australia's healthcare system in the following nine sections:

1. **Healthcare system resilience and preparedness**
2. **Australia's Healthcare system: What is essential?**
3. **Economics of Healthcare.**
4. **Healthcare governance and culture.**
5. **Workforce challenges and opportunities.**
6. **Health related supply chain risks and vulnerabilities.**
7. **Opportunities for Australia's Healthcare system.**
8. **Communicating the opportunities.**
9. **Conclusions.**

Section One - Healthcare system resilience and preparedness

The health and well-being of Australians is a national security / resiliency issue and one that needs to be assessed for risks and vulnerabilities just like every other aspect of national security, from energy to the economy to the environment to the military.

The UNISDR definition of resilience is: "The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and function." ¹

Our security as a nation depends on collective resilience, yet Australia's ability to handle a growing range of economic, military, climate and health threats has eroded in recent times.² To quote the Home Affairs report on *Profiling Australia's Vulnerability* published in 2018, "what affects the nation's resilience is the array of choices and decisions that have been made over generations and the decisions being made now that affect future generations. Fundamentally, the values and trade-offs inherent within these decisions have consequences and getting the balance right is a complex challenge."³

Australians, in particular our health professionals, reacted very well to the pandemic. But were we adequately prepared for this or a range of other significant risks that could eventuate? Whilst Australia has been preparing for decades in anticipation of an eminent threat of an influenza pandemic, there was little to help our government and authorities to manage the COVID-19 pandemic.

Were we prepared for the pandemic?

A society cannot be as resilient as possible if it fails to prepare for potential future crises.

The Victorian government was warned by its own Health Department at the onset of the COVID-19 crisis that its front-line defence against a pandemic was in disrepair and putting the entire community at unacceptable risk.

A confidential budget submission lodged by the Department of Health and Human Services in January 2020 revealed the government knew its highly centralised, poorly resourced public health team was under-prepared for what was coming. The submission made the assessment “In its current state, the health protection system does not have the necessary capacity or capabilities to prevent, respond and protect against current or emerging threats to [the] Australian community ... The government can no longer continue to protect Victorians and is exposing the community to unacceptable risks.”

Source – Sydney Morning Herald 11 Dec 2020:

<https://www.smh.com.au/national/victoria/andrews-government-told-health-system-was-in-disrepair-before-covid-19-struck-20201211-p56mnw.html>

We conclude that there are three key characteristics or attributes that we need to strengthen in our society for improved resilience. These are:

- **Shared Awareness.** With shared awareness we can act rationally and prepare, without it we just react.
- **Teaming / Collaboration.** We cannot solve our complex challenges by looking for incremental quick wins; we need a team approach within our nation and, as importantly, with our neighbours and allies.
- **Preparedness.** There is an opportunity to learn from Defence preparedness concepts and systems and implement them in other societal domains such as healthcare.

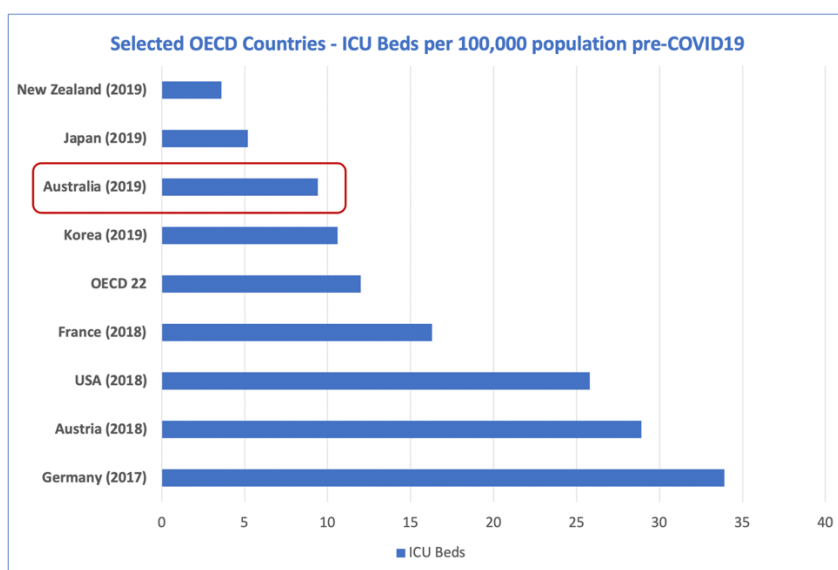
We need to accept the Home Affairs report findings that the consequences of past decisions have had the perverse outcome of engineering structural vulnerability into broad societal domains. If we can acknowledge these growing vulnerabilities and then decide on measures to prepare for future threats and system shocks, then we can be better prepared and thus develop more resilience. However, this will come at a cost that is currently not politically acceptable without broad public support.

The Australian healthcare system is very reactive; it is focussed on managing the near-term crises with little spare capacity to address the medium/longer term challenges. Our ability to address healthcare resilience is hampered by the conflict between the need for efficiency and the expectations of individuals and groups in our society. Australia’s neoliberal political culture of the “free market knows best” drives cost efficiency in the face of a finite resource pool. Our societal expectations however trend towards ever growing assumptions that the latest technologies and high-cost pharmaceuticals will be made available to us as patients. The impacts on our health system from a combination of factors including an ageing population, climate change / extreme weather events, economic stagnation and pandemics have not been adequately analysed and communicated with Australians.

A common political excuse is that you cannot prepare for an event that is “unprecedented”. The Australian Royal Commission into National Natural Disasters Arrangements of 2020 has a contrary view... “Unprecedented is not a reason to be unprepared ... We need to be prepared for the future.”⁴ Without a common understanding of the challenges we face collectively, there is little possibility that we will dedicate the resources necessary to prepare for the future. We need to have a shared understanding and a willingness to work together as a team across the nation, if we are to address our resilience issues.

We face three essential healthcare resilience issues related to demand, supply and systemic factors. Examples include:

- **Demand.** Increase in demand should be strategically anticipated in countries with an ageing population and coupled with recognition of growing societal expectations of the best available healthcare. A surge in demand from events such as pandemics should also be a planning priority; this was not factored into the design of our healthcare system prior to the pandemic. Other demand risks are addressed in Section 2 of this report.
- **Supply.** Supply constraints due to economic factors, combined with a drive for cost efficiency, have produced a health system in Australia that at the start of the pandemic had 25% less total hospital beds than the OECD average, and only 9.4 intensive care beds per 100,000 population. In contrast, Germany had 33.9, the United States 25.8 and Canada 12.9, and although the utility of more ICU beds in non-pandemic periods is unlikely to be warranted, it is certain that if Australia had suffered infection rates as high as Europe and other parts of the world, our ICU capacity would have been overwhelmed, with no pre-planned capacity to flex to this surge in demand.⁵ Another example of inadequate resilience to supply is the vulnerability to healthcare provision resulting from importing over 90% of our medicines in a period of unprecedented medication shortages, and being import-dependent for nearly all of our Personal Protective Equipment (PPE). These issues were not recognised or addressed prior to the pandemic. On top of this, we had no public visibility of the minimal stocks of essential medical consumables or mandated minimum stockholding levels for critical items. If we do not have shared awareness of these issues, it is impossible to have a coherent discussion on how we can address them.



- **Systemic Factors.** Australia’s Federal structure results in separate health systems in each State and Territory that are largely bespoke, often placing healthcare as a political football between

State and Federal governments. These structures also often result in a lack of standardisation and common systems between jurisdictions, and produce inconsistent, reactive control measures by local healthcare authorities that can often be detrimental to health care services, with broader societal knock-on effects. Reflecting on localised impacts of the pandemic in Australia there are clear examples of how such competing jurisdictions can have adverse consequences in emergent disruptive circumstances, where geographic state borders caused unnecessary disruption to health systems across these border zones that could have easily and safely been avoided. The subsequent political point scoring targeting impending elections was of no benefit in dealing with a rolling health emergency. An example of this is discussed below.

ALBURY-WODONGA – CAUGHT IN THE CROSS (BORDER) FIRE

The COVID pandemic has exposed the public health risk to border communities when State Governments, located far from these towns and rural cities, imposed strict border restrictions for many months during 2020. The Albury-Wodonga community, on the New South Wales / Victoria border, was hit particularly hard.

The Albury Wodonga Health (AWH) website boasts that it “is a unique cross-border health service ... providing the best of health to more than 250,000 people ... [from] 17 sites across North East Victoria and Southern New South Wales.” The 61,000 emergency presentations and 40,000 in-patients over a (non-COVID) 12-month period at AWH is testament to the professionalism and commitment of the healthcare professionals to their local communities – both north and south of the Murray River. Poorly considered border closures, imposed by the NSW Government, changed all this.

In July 2020 senior doctors from the border region submitted an open letter the NSW Health Department saying: “Here in Albury Wodonga we are also facing the very real threat of an entirely preventable tragedy if patients cannot receive timely and appropriate emergency medical care due to border delays”

By August 2020 the situation was worsening as NSW restrictions on Melbourne-based locums saw AWH facing a critical shortage of doctors.

The ABC reported that locums, who make up about two thirds of Albury's emergency department staff, could no longer work at the hospital on the NSW side of the border. AWH Chief Executive Michael Kalimnios told the ABC that the hospital relied heavily on the locums who travelled up from Melbourne and they usually worked on a six-week rotation. He said:

“The current permit arrangements that are in place and exemption arrangements that are in place exclude anybody coming from Melbourne, even if they're a critical care working into NSW ... It is clear that NSW Health's policy position around this is that we can no longer access staff from Melbourne ... **This is the sort of stuff that gets in the way of delivering good health care**” Mr Kalimnios said.

There has to be a mechanism, a governance forum, that facilitates discussion and planning around health and well-being across the Commonwealth, State and Territories as well linking with communities and public and private health providers. **The Albury-Wodonga experience cannot be allowed to occur again.**

<https://www.abc.net.au/news/2020-07-24/nsw-victoria-border-restrictions-putting-lives-at-risk-doctors/12487874>

<https://www.abc.net.au/news/2020-08-12/albury-wodonga-health-faces-critical-staff-shortage-amid-covid19/12547458>

Section Two - Australia's Healthcare System - What is essential?

Determining what is essential in healthcare first requires a definition of “health.” This report uses the term as a state of wellbeing and not just the absence of disease. World Health Organisation (WHO) defines a health system as “consisting of all organisations, people and actions whose primary intent is to promote, restore or maintain health.” The WHO describes the following building blocks that make up the health system: service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance (stewardship).

For the Australian context, the healthcare system comprises the public and private health systems that include consumers, patients, carers, families, policy makers, researchers, healthcare professionals, aged care providers, governments, and commercial suppliers of products and services, infrastructure services, and technology and information management systems.

Defining what is essential, and to whom, is not a static definition. Not only do therapeutic options change and generally improve with time, but many other aspects of health care also change, as does our resource capacity, expectations and demographics. Using life expectancy as an example, in 1950 this was 66 years compared to 83.5 years today. Over the last seven decades, community expectations of what healthcare can deliver has increased, and so has expenditure on such care to the growing number of elderly people. In this mix of change over time, what is considered essential has also changed, but regardless, what can actually be delivered is always necessarily linked to a society's resource capacity to provide. We cannot expect that there will be a constant increase in resources or that life expectancy will forever increase.

In order to create a more resilient healthcare system for Australians, it is important to recognise that it is a vast, interconnected system that links areas such as science, technology, industry and society. To define the essential components, it is necessary to identify existing vulnerabilities and a range of potential future shocks that need to be considered in healthcare planning and resourcing. These should include the impacts, potentially concurrent, of the following:

- **Pandemics.** A robust public health response needs national legislative power allowing institutional responses to reduce community transmission. Other essential components include healthcare infrastructure designed to cope with contagion, access to equipment such as PPE to prevent staff infection, surge capacity in hospitals and relevant community organisations to cope with “unprecedented” loads, and a secure supply of pandemic disease-specific therapeutics and associated resources. The lessons from the global and national response to the current pandemic need to be learned and not just observed.
- **Environmental disasters.** Whilst Australia has well developed natural disaster response mechanisms, a deeper understanding of region-specific environmental vulnerabilities would help define requirements for rapid response teams, field hospitals and supply chain logistics following infrastructure destruction. The 2020 Royal Commission into National Natural Disasters Arrangements report is a good starting point given that it accepts climate science and the growing risks of more severe weather events⁶. However, the lack of acceptance of this science by a number of our politicians remains a significant problem directly impeding the development of resilience.
- **Geopolitical instability / conflict.** Global supply chains are very vulnerable in the event of conflict. Improved supply chain resilience could be achieved through the combination of local manufacturing of some essential products, mandated stockholdings and diverse sourcing. This

approach was been described as “smart sovereignty and trusted supply chains” in the IIER-A brief to the Australian Joint Parliamentary Committee for Foreign Affairs, Defence and Trade on 22 April 2020.⁷

- **Mass terrorism.** Terrorism events require specific infrastructure to deal with large scale trauma/burns, antidotes to bioterrorism and expanded trauma services.
- **Future threats.** Emerging risks such as the impacts of climate change that could trigger mass migration and regional food insecurity need to be considered in relation to what is essential to manage such scenarios in the medium to long term.

Australian Federal, State and Territory Governments need to define the metrics of what is essential for the health and wellbeing for all Australians. This will require clear and transparent mechanisms for all stakeholders to have input into what is defined as essential, and more importantly, what is not. In turn, the reasons and results of such vexing and complex decisions need to be clearly and transparently communicated to the Australian public.

The focus of such metrics is often framed within a western biomedical paradigm. However, investment in other areas such as social equity, preventative and public health responses, can be much more impactful and effective than focussing only on pharmaceutical and medical device therapies delivered through acute clinical care.

In the case of pharmaceuticals, there have been international attempts in defining what is essential; a prime example being the World Health Organisation (WHO) list of Essential Medicines. What is considered as “essential” has expanded over time – 203 products on the list in 1977 and 490 today - partly as a result of increased therapeutic options, and partly because of how “essential” is defined and who it is defined by.

In Australia there are two legislated positions defining what medicines are essential. The PBS commenced in 1948 with the explicit purpose of providing life-saving and disease preventing medicines to the community. The number of medicines on this list, initially 139, is now 793.⁸ The objective of the PBS was both health-outcomes and economically oriented - firstly to provide equitable access to medicines, and secondly to achieve market dominance to optimise efficiency in government expenditure on these products. However, over the past 20 years, these objectives have been corrupted.

There was a view expressed by health professionals at the report workshop that the definition of what is essential in terms of medicines on the PBS has also been gamed by Big Pharma, and the process of efficient purchase for greatest health utility has been subsumed by corporate lobbying. This can be seen in the “Guaranteeing Access to Medicines”⁹ initiative in the last Federal Budget, where the value that has been articulated by the Health Minister is access to new therapies with no mention of health outcome or cost utility. Despite recent unprecedented national shortages of essential but cheap off-patent medicines,¹⁰ the Federal Budget promised funding extreme-cost new patented medications as a priority.⁹

The TGA has recently made some progress in defining essential medicines. In 2018, under the mandatory reporting scheme for medication shortages, the TGA legislatively defined medications that would have a critical patient impact if they became unavailable, listing 89 drugs on the Medication Watch List.¹¹

The Australian government has made other efforts to define and protect other essential medical products, for instance the National Medical Stockpile (NMS). However, this does not address what is “essential” to the broader healthcare system in a range of crisis circumstances. The NMS was mandated in 2007 under the National Health Security act, primarily to prepare for potential terrorist attack, but was expanded in 2012 and 2013 in light of the H1N1 influenza pandemic of 2009 to include PPE in the case of a viral outbreak.

Unfortunately, the NMS did not have clarity around access to PPE which caused confusion early in the pandemic. The Stockpile did not store sufficient levels of PPE and it would have been rapidly depleted if Australia had experienced a more severe trajectory of pandemic as occurred in most other countries. In addition, the NMS does not cater for risks such as geopolitical instability / conflict. PPE rules and distribution processes were complex with disparate State and Federal stockpiles and variability in who had access.

In a 10 December 2020 Sydney Morning Herald article exploring the NSW Government response to the COVID-19 pandemic, the authors reported that:

“[Premier] Berejiklian took a look at what items the federal government could provide from the national stockpile set aside for emergencies. She was taken aback. It wasn’t nearly enough, not even to meet the state’s needs for a week ... ‘I knew [then] we had to rely on ourselves’, she said.”

Governments around the world are initiating significant economic investment to stimulate their economies whilst providing opportunities to embed resilience into sovereign industry capabilities. The Australian Federal Department of Industry has embarked on a \$107.2 million investment into making the supply chain more resilient.¹² Whilst laudable, the effectiveness of such initiatives will depend on how critical and essential elements of the supply chain are identified and strategically supported. The lack of evident analysis in identifying these areas is of concern.

In a period of economic contraction such as we are currently experiencing, and likely to continue experiencing, what is “essential” in terms of *utilitarian outcomes* for Australian society must include best value investment. In the face of a growing demand / economically limited supply gap, essential outcomes could be considered as:

- **Primary healthcare** – primary healthcare is where the management of most sick people actually takes place - access to preventative healthcare, basic diagnostics, medications, and disease management, and as such is essential to healthcare provision in Australia. Beyond this though, in a crisis situation, primary healthcare facilities could be used to bolster acute care service needs by utilising primary care staff and infrastructure, however such surge capacity design needs to be strategically planned. Insights on how to balance health systems under resource pressures can be found in developing countries, notably successful low- and middle-income health systems that have a strengthened primary care in preference to acute care.
- **Acute healthcare** – access to hospitals, advanced diagnostics and to critical life-saving medications and other clinical equipment.

- **Aged Care** – in recent years residential aged care has effectively become primarily a palliative care operation, with Australians entering care much older in life and the average length of stay being 2.5 years. The aged care system was completely unprepared for any sort of viral outbreak.
- **Supporting systems and logistics** - including appropriate IT foundations and cyber-secure infrastructure to optimise the operations of complex healthcare systems, and analysing performance and opportunities for greater efficiency.
- **Healthcare workforce** – health sector personnel who are trained and skilled, to a job-ready level, within a system of training and education that involves collaboration between research centres, universities, training schools, industry and the public and private health sectors.
- **Effective, adaptable and sustainable medical industry** – pharmaceutical, diagnostics, device and healthcare equipment supply chains with strategic resilience resulting from investment to address specific healthcare supply chain vulnerabilities.

A major factor in healthcare outcomes is preventative health, which includes addressing social determinants of ill-health. Primary healthcare reaching back into this pre-illness space, with a focus on prevention, can be very cost-effective, and the cost-effectiveness of preventative therapies needs to be benchmarked so that “essential” can be tied to maximum utility across the broader community rather than on the needs of an individual. The November 2020 report by the Consumers Health Forum of Australia entitled, *Making Health Better Together*, observed that “There is a clear link between poverty and poor health and social outcomes and therefore policies that reduce poverty, ensure stable housing and meet basic needs are important for improving health and wellbeing...”¹³

Understanding and strengthening the social determinants of health should be considered one of the foundational “essentials” of our healthcare system. Most people would prefer to avoid or mitigate a problem before it becomes problematic. Most people, given the tools, knowledge and support, would prefer that they could circumvent negative health outcomes in a cost-effective, compassionate and practical way. But they cannot do it alone – governments, communities, healthcare professionals and the medical-industrial complex must work together.

So what really is “essential”? We think it is a healthcare system based on prevention, social equity, leadership, professionalism, and genuine cooperation and engagement to optimise the health and wellbeing of Australian society.

Section Three - Economics of Healthcare

Prior to addressing the specifics of the economics of healthcare in Australia, we should recognise that the medical-industrial complex can provide a significant level employment for many Australians. In fact, the Health Care and Social Assistance sector is our largest and fastest growing employment industry.¹⁴ We need to balance the expectations of a cost-efficient and effective healthcare service with one that also delivers employment, which in itself has significant value to the broader society.

Although healthcare expenditure in this country is relatively efficient from an OECD benchmark perspective, GDP growth in expenditure on health per capita has consistently risen faster than growth in GDP for decades (as is the case in all high-income countries). It is not clear that growth in resources for healthcare can be sustained in conditions of low or negative GDP growth, a likely global scenario in the foreseeable future. The economic shock of the COVID-19 pandemic has also

demonstrated that our healthcare systems are more vulnerable and less prepared than they could have been¹⁵. Lack of preparedness will eventually come at a cost.

Equity has been a founding principle of Australia's healthcare since the National Health Act of 1953 and universal access through Medicare in 1984. Australia has led in policy innovations such as the PBS and Medicare that have ensured affordable healthcare to all Australians. However, concepts of resilience and sustainability have never been formally embraced in Federal or State healthcare policy and are absent from current approaches to economic evaluation in healthcare. It is imperative to examine Medicare and the PBS to ensure that public funds are invested wisely, as efficient investment in healthcare is at the core of resilience.

Efficient and effective primary and specialist care is essential in resource-constrained scenarios to ensure optimum resource utilisation and greatest benefit for most people. Identifying and understanding the economic risks and drivers of Australia's healthcare system is essential to deliver sustainable healthcare to Australians. An incredibly complex system of public and private funding (Hospital/State/Territory/Federal), resource management, bureaucratic and policy chains of command, legislative limitations and constant "turf battles" are behind the complexities of these drivers and subsequent risks. Examples of resulting issues include:

- The Department of Health *Pharmaceuticals in Hospitals Review* of December 2017 reported that "public hospital stakeholders noted that the dual funding of medicines by the Commonwealth and state/territory governments creates duplication in systems and some suggested that a single funder model could reduce this duplication."¹⁶
- High-value therapies are often not recognised as such due to pricing, e.g., off-patent small molecule medicines such as benzylpenicillin are highly effective but very cheap, yet regular issues of short supply over the past decade have never been systematically addressed.¹⁷
- There are opportunities to use big health data to better understand expenditure efficiencies/inefficiencies in healthcare systems, incentives and spending. However, according to workshop participants, there are multiple IT systems in operation across all aspects of the health sector with little integration. Some participants expressed a view that commercial companies holding public health data are unable to differentiate between their commercial interests and the public interest, thus creating a barrier to effectiveness. They concluded that a data-driven approach towards the re-design of Medicare could provide an opportunity to monitor medical practitioner billing against certain Item Numbers to ensure a system more suitable to the 21st Century Australian healthcare sector and the reality of the influence of corporates in the market. One workshop participant summed up the relationship between the healthcare sector and embracing digital technology with this statement: "I think it's fair to say we're still miles behind most other industries ..."
- Government institutions such as the PBS can be gamed by lobbyists, and Medicare fee-for-service can be, and is, gamed by a small number of clinicians and institutions, reducing healthcare outcome efficiencies. As one example, despite clear evidence that many medical procedures funded by PBS represent low-value investment, the PBS continues to financially incentivise such practices.¹⁸ Another example is described in recent research from UTS identifying significant inconsistencies in Medicare billing for consultations, clearly demonstrating how innovative funding models for service delivery are gamed by providers, reducing the effectiveness of health care expenditure.¹⁹ One of the concerns expressed by these researchers is the increased role of corporate organisations undermining the value-add of health practices. In this example and the case of bulk billing, the patient does not receive a

bill for a consultation. The patient therefore does not know if they have been charged \$130, \$60 or \$50 or what Medicare Item number their consultation has been lodged under. These inconsistencies in growth of costs between States suggest that there may have been an unjustified increase (gaming) in Medicare billings in the order of \$70M. The conclusion from this is that the impact of corporates entering this segment of the market needs to be carefully reviewed by the Department of Health. Similar concerns were also raised by the Health Minister who publicly demanded a Professional Services Review investigation into a large after-hours corporate medical service after it was accused in media reports of “dodgy deals” and inadequate patient care.²⁰

There is the opportunity to improve efficiency through continually improving transparency of process, regulation and auditing of healthcare systems and resources. The PBS has successfully capitalised on developing state market dominance to allow Australia’s small marketplace to engage with global pharma and achieve competitive pricing for medicines. However, in recent years, the process of how medicines are listed on this inventory has been changed to the favour of Big Pharma, with generics manufacturers generally unable to contribute to policy development. The effectiveness of the PBS in maintaining low-cost medicines supply chains has subsequently been eroded. These changes have also had other broader economic impacts, for instance by compromising the viability of generic non-patented medicines manufacturers in Australia.

The economic model of pharmaceutical procurement has a weakening link and increasing discrepancy between financial (dollar) and human (actual healthcare outcomes) value. The cost of a vial of life-saving antibiotics can be less than the price of a Mars Bar, but the cost of a new patented injection that does reduce cholesterol levels, but not the risk of death, can be equivalent to the cost of a brand-new Porsche. Pricing mechanisms have flow-on effects to Industry incentives, and the current model of pricing is dis-incentivising local manufacturing industries of producing some of the most essential and life-saving medicines and products resulting in growing import dependencies that impact resilience.

Medicare has operated on a fee-for-service basis which has resulted in lost opportunities to improve efficiency. Whilst the PBS has had comparative success in maintaining low-cost medicines compared to other members of the OECD,²¹ Medicare has not achieved comparable efficiencies in cost of doctors. There are many OECD nations where GPs, and particularly specialists, have a much more modest income relative to other occupations.^{22 23} Medicare has also introduced many inefficiencies into healthcare expenditure, and subsequently, the quality of Australia’s overall healthcare system. Fee-for-service can lead to fragmented care, turf wars between clinicians fighting for the dollar, and gaming of remuneration.

Although supply is increasing, doctors’ earnings are growing at 1.8 per cent per year above inflation, with increases across all doctor types, most age groups, for males and females, and across most specialties. Doctors’ earnings are unlikely to fall due to increased supply as long as demand for healthcare continues to increase.²³

These concerns are reinforced by the Global Access Partners Taskforce 2019 Report, *Ensuring the Sustainability of the Australian Health System* which noted that the “fee-for-service model is increasingly inefficient ... creating few incentives for practitioners to contain healthcare spend whilst striving to improve patient outcomes.”²⁴ Alternative models of funding that target efficient and effective use of healthcare resources are warranted.

The November 2020 report by the Consumers Health Forum of Australia entitled, *Making Health Better Together* also suggested the following “practical change” to address the inadequacy of the current healthcare funding model: “There is a need to develop funding models that enable and incentivise high value care, multidisciplinary approaches and prevention of illness focused on the needs of the consumer ...”²⁵

Federal health policy related to healthcare costs is a political process where special interest groups such as the AMA, the Pharmacy Guild and Medicines Australia have significantly more leverage over policy agendas than other sectors just as vital to a resilient healthcare industry. The Australian healthcare sector is further complicated by funding models for specialist and acute hospital care. Hospitals are funded through various models; private insurance, consumer out-of-pocket, Medicare, and Activity Based Funding, along with complex Federal-State funding arrangements. This is a highly fragmented and convoluted funding structure. The Federal-State divide often politicises healthcare economics leading to poor strategic outcomes in areas where there are clear opportunities to improve efficiency.

There is ample historical analysis of the Australian healthcare system that demonstrates where inefficiencies and opportunities exist. What is lacking is leadership and political will to engage in complex spaces. Examples include:

- Service duplication / multiplication and extreme fragmentation.
- Funding models that do not incentivise quality care.
- Low-value care and overuse of ineffective interventions.
- Poor inter-and intra-agency collaboration and co-ordination.
- Demarcation, turf and professional boundary setting reducing opportunities for appropriately skilled workforce to provide required clinical service in a more cost effective and efficient manner. Nurse Practitioners being one example.
- The significant variation in service provision and utilisation of different procedures and pharmaceuticals in different parts of the country e.g., Tennant Creek vs. Double Bay.
- Lack of capacity for any one centralised mechanism of control / coordination where appropriate.
- Lack of meaningful investment in prevention strategies.

Healthcare economics fundamentals should also be compared to other industries/nations, to highlight challenges and the opportunities for greater equity and efficiency. There is one caution in using a benchmarking approach in that, whilst valid, it is inherently backwards looking, and often does not provide very useful insights about emerging problems. Nevertheless, we learn from examples of best practice and value in more resource-constrained health systems, and we must learn from our and other nations’ responses to COVID-19.

Section Four - Healthcare Governance and Culture

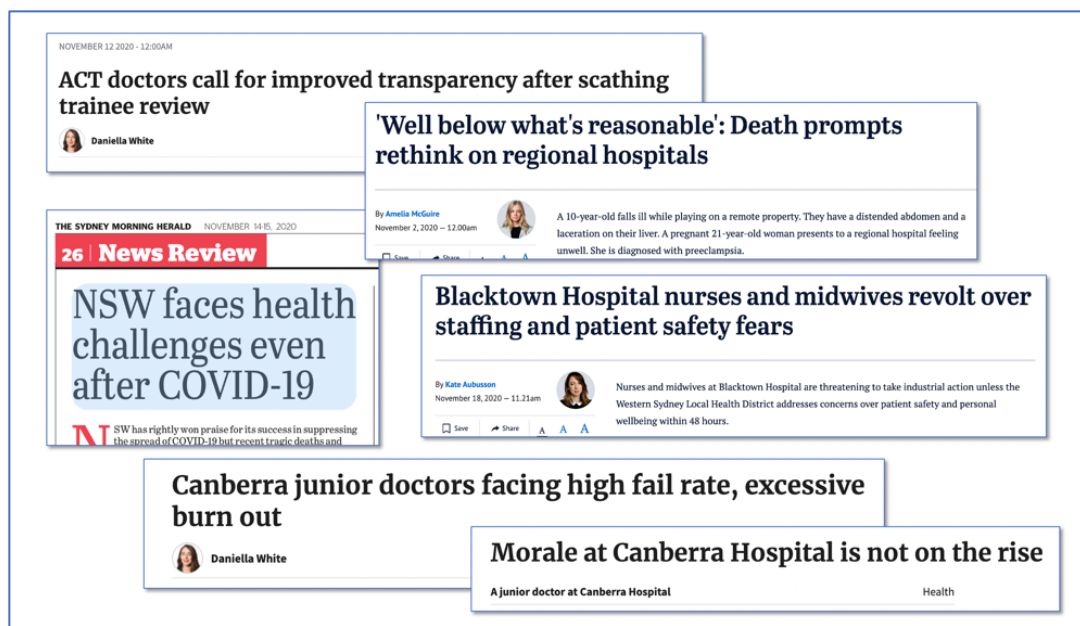
The Governance Institute of Australia defines governance as follows: “Governance encompasses the system by which an organisation is controlled and operates, and the mechanisms by which it, and its people, are held to account. Ethics, risk management, compliance and administration are all elements of governance.”²⁶ Interestingly, “culture” is not included in that definition. They do however note that governance can be argued to have four key components: transparency, accountability, stewardship and integrity where integrity is defined as “developing and maintaining

a culture committed to ethical behaviour and compliance with the law.” But culture is a lot more complex than this.

Global academic and professional healthcare narratives around improvements in wellbeing focus almost entirely on the gains that can be made by scientific biomedical and assistive technology development. However, poor healthcare governance can impact healthcare provision and ultimately compromise clinical care to individuals. At local levels, there is a high level of accountability for clinicians to perform to a set of standards; however, there does not appear to be such expectations or definitions of performance for healthcare bureaucrats.

Prior to addressing overall healthcare governance challenges, it is worth highlighting the cultural issues that are evident in the sector. The health professionals who participated in our workshops raised the following concerns regarding the culture issues in the sector:

- The issue of tribalism within clinical healthcare settings that is evident, but which has not been widely acknowledged despite numerous media reports of significant problems within hospitals. The reports are symptomatic of a much larger cultural issue. These include accusations of bullying, discrimination, draconian training practices as well as disputes between health administrators and health practitioners.²⁷



- The narrow focus of medical specialist training colleges is also viewed as problematical by some health professionals. Medical specialist training colleges have a monopoly over training, and a status quo exists that is beneficial to these colleges and their members, and whilst it is acknowledged that these colleges provide the highest calibre of training, the pecuniary interests of their fellowship do not always align with the most cost-effective models of service delivery. Medical specialists in Australia typically earn nearly twice as much as GPs.²⁸
- As noted in the discussion on healthcare economics, fee-for-service payments can lead to turf wars between clinicians and gaming of remuneration.
- Federal regulatory bodies such as the TGA are not considered sufficiently dynamic to deal with the health challenges we are facing today. They are viewed as being reactive in areas of regulatory oversight that warrant shared understanding and transparency. Over the last decade,

the TGA has been slow to respond to escalating medication shortages and appears to be mired in bureaucracy.

- A little-mentioned ‘cultural’ impediment to healthcare sector performance and reform was identified in the Global Access Partners Taskforce Report from 2019, *Ensuring the Sustainability of the Australian Health System*. The Taskforce observed that the “perception of a high-performing system” can be viewed as a negative motivator. The report noted: “It is regularly stated at the political level that Australia has one of the best healthcare systems in the world. This can hold back any reform which is not bipartisan, with arguments for the status quo often winning out.”²⁹

Whilst recognising that these concerns regarding culture in the healthcare sector are symptoms, it is still worth considering how other large organisations have dealt with such issues when faced with similar symptoms. A case in point is that of the Royal Australian Air Force (RAAF) which embarked on a major cultural change program in 2000 after determining, through a whole of organisation cultural survey, that the organisational culture was not fit-for-purpose for the force it needed to become in the following decades. The two key concerns highlighted were tribalism and an over dependence on hierarchy to manage the Service which constrained sharing of critical information and teamwork. Some of the issues raised previously with respect to the healthcare sector culture echo those of the RAAF at that time. The decision by the then RAAF Chief to address the cultural issues resulted in a decade long program of cultural change that led to significant improvements in the organisational environment and, in turn, performance. That said, it was a single service initiative and the lack of an integrated Joint / tri-service cultural change program remains an issue to this day.

The challenge for the healthcare sector is that there is no single “chief”, rather a series of distributed “chiefs” across Federal, State and Territory politicians, bureaucracies, hospitals, medical centres and these being overlayed with different operating and funding models and business structures. Noting the importance of this sector to our society and the scale of investment required to function, there needs to be a national, teamed, review to determine exactly what the issues are and the scale of the problem. Noting the mobility of the healthcare workforce across State/Territory borders, it will need more than a single State/Territory to initiate such a review and program. Given that healthcare operations are run at the State/Territory level, a collective effort to trial such a program would best be led at that level.

Turning to the broader topic of Healthcare governance, we observe that there are challenges at multiple levels throughout the sector. The healthcare delivered in contemporary Australia is done so in a vastly different social, environmental, economic, scientific, clinical and industrial paradigm than at the time that most of these landmark healthcare policies were developed in Australia – the National Health Act of 1953, the Therapeutic Goods act of 1989, the National Medicines Policy (NMP) of 1999:

- Much of the legislation fundamental to governance is no longer fit-for-purpose. Institutions that have been tasked with fundamental roles in ensuring safe and effective therapies have failed to perform.
- The TGA is tasked with ensuring timely supply of medicines, yet Australia has had increased levels of shortages over the past decade and there has been little apparent response from the TGA or the Government other than to notify clinicians and the public of such impending shortages and to find replacement options that are made available to the public via shortcuts to normal regulatory requirement.

- The NMP is built on four pillars, two of which it has clearly failed to address³⁰. Tasked with ensuring timely access to the medicines that Australians need, there has been almost no action on the escalating number of medication shortages. Tasked with maintaining a responsible and viable medicines industry, there has been almost no accountability of Big Pharma lobbying as discussed later in this report.

Better integration and assessment of the functions and outcomes of governance structures need to be defined in order to improve overall healthcare resilience. The foundations upon which healthcare is built, including education, training, energy, industry and economy, need to be integrated in order to build resilience as a fundamental quality of healthcare. Any policies that have the potential to impact essential elements of healthcare should be acknowledged as such and designed to ensure that they contribute to a continual net gain of sovereign resilience.

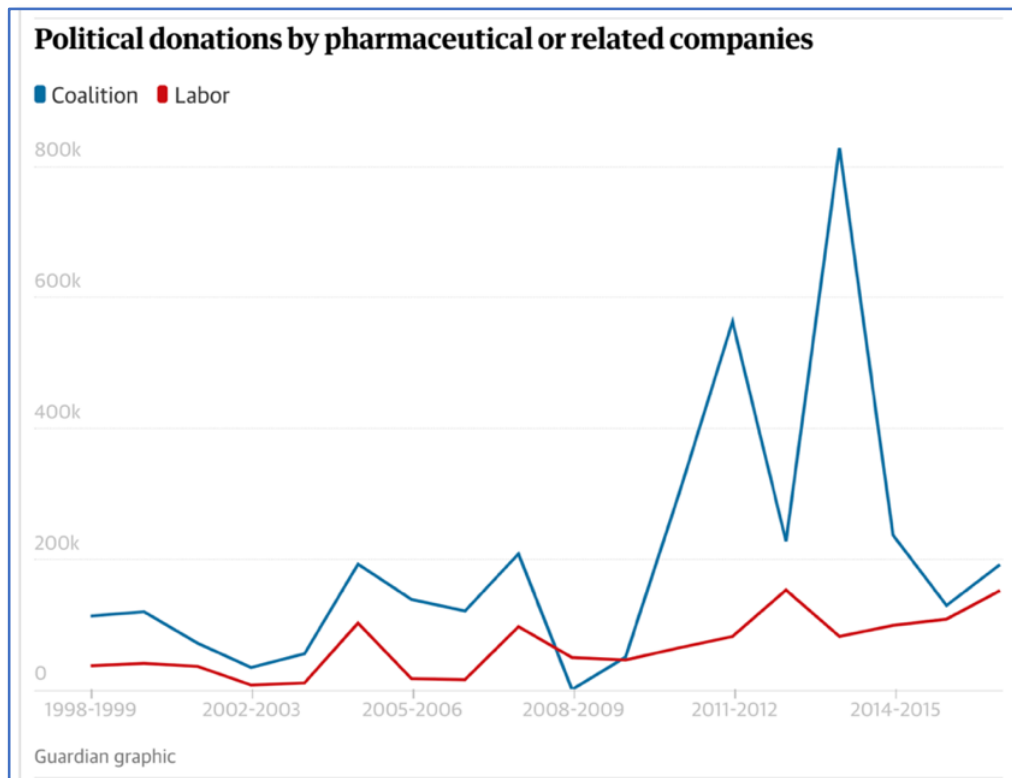
One example of a policy that resulted in a reduction of resilience was the PBS Reform 2007, where mandatory price reductions were placed upon generic medicines. The subsequent economic pressures on local manufacturers of essential pharmaceutical products resulted in large parts of the industry moving offshore. The federal government analysis of the impacts of this reform completely neglected this outcome and framed their analysis only through a health economics cost-savings lens.³¹ It appears that the Australian system of government to date largely neglected consideration of resilience as a core requirement for our healthcare system.

Another matter related to pharmaceuticals is the jurisdictional disconnect of the Pharmaceutical Reform Agreements (PRA). NSW and ACT have not agreed to sign the PRA and the Society of Hospital Pharmacists of Australia, in a submission to the Department of Health report *PBS Pharmaceuticals in Hospitals Review* of December 2017 said the following: “As a consequence of the uneven adoption of the PBS medicines in hospital program, patients in non-PBS states and territories often experience inadequate care, especially for complex and unusual conditions...”³²

Areas for improvement in governance structures include:

- **Federal v State/Territory.** The division of responsibility between Federal and State/Territory encourages the politicisation of healthcare, which can be detrimental to a broader strategy of ensuring equitable and efficient delivery of health services.
- **Federal pricing bodies.** Medicare and PBS are beset with conflicted funding priorities with a priority on high-cost therapies with little strategic direction as to how the sector is / should be evolving to meet future public / private healthcare challenges. For example:
 - the PBS and negotiations around listing new drugs is flawed allowing Big Pharma to have a disproportionate role in price negotiations of new patented medications.
 - Medicare is a fee-for-service model and although there are efforts to contain the loss of efficiency and effectiveness that such pricing practices lead to, there has been little apparent consideration of a shift to other more equitable and sustainable models of funding.

There is a pressing need to place a governance framework around the lobbyist industry and the healthcare sector. The pharmaceutical industry has engaged vast numbers of lobbyists and donated millions to both political parties. In 2018, the Guardian Newspaper reported that about 72 separate pharmaceutical businesses engage paid lobbyists to influence government decisions and policy (the Guardian graphic is below.) They were represented by 29 separate lobbying firms, many of which have former ministerial or political advisers as staff. ³³



GRAPHIC SOURCE: THE GUARDIAN – 20 SEPTEMBER 2018

<https://www.theguardian.com/business/2018/sep/25/pharmaceutical-industry-donates-millions-to-both-australian-political-parties>

Governance models also need to acknowledge and prepare for potential disruption - failures within the NMS demonstrate that highest-level health bureaucracies tasked with disaster preparedness were not aware of predictable future shocks. Despite the fact that the NMS was re-assessed and re-purposed after the 2009 H1N1 pandemic, it proved in the COVID-19 pandemic to have serious shortfalls in pre-event planning, or in-event strategy, for pandemics. A lack of cohesive PPE policy, and the ordering of thousands of ventilators, that could not all be used concurrently as there were not sufficient medications or specialist doctors and nurses to support such infrastructure, are clear examples. Of course, we are not unique in this area; the New York Times reported in November 2020 that “They (*US hospitals*) have enough ventilators, but not nearly enough respiratory therapists, pulmonologists and critical care doctors who have the training to operate the machines and provide round-the-clock care for patients.”³⁴ The article also highlighted the shortage of medicines.

Section Five - Workforce challenges and opportunities

According to the University of Melbourne's Medicine in Australia: Balancing Employment and Life (MABEL) study team, healthcare is the largest sector of the economy, at over 10 per cent of GDP and employing 14 per cent of the Australian workforce, making it the largest employer in Australia. In relation to the doctor workforce, the MABEL team note that, "Policy makers need to ensure medical practitioners are highly motivated, productive and optimally distributed across locations and specialties. Yet this is not the case. Poor health and wellbeing, oversupply in cities but continuing doctor shortages in areas of high need, increasing specialisation, and the slow uptake of new evidence and innovations are key issues. **Without a productive, motivated and appropriately skilled medical workforce, distributed equitably across Australia, innovations to save lives and to prevent and reduce the burden of disease will not have the desired impact**".³⁵ The final sentence clearly applies across the entire spectrum of the Australian healthcare sector and will be discussed in more detail in the following section.

The workforce required for the provision of healthcare is extensive. It comprises the clinical workforce including nurses, doctors, pharmacists, physiotherapists, personal care workers and other allied health professionals, the administrative workforce co-ordinating provision of these services and those in the manufacturing industry (and import sector) for pharmaceuticals, materials and equipment, and, the research sector.

The clinical workforce is robust in Australia, but under significant stress as a result of the pandemic. There are opportunities to develop more resilience in this sector in the future to help prepare for future crisis events. The risk of an exodus of healthcare workers after the pandemic is very real and must be acknowledged by reforms to the system.

Issues that pre-date the pandemic that could be addressed include the following:

- Current training pathways need to have a greater focus on preparing workplace-ready trainees with a broader, not more specialised, skill set.
- The diverse range of training colleges are disparate and often unnecessarily complex and designed in part by special interests that can impair competitive and efficient outputs.
- Current training and workforce practices are based around a consumptogenic model of healthcare delivery and incentivises inefficient and costly clinical practice.³⁶
- Clinical workforce distribution within Australia is unevenly distributed towards higher socio-economic urban areas, and there is a lack of equity and strategic investment in other regions such as rural and remote spaces. This diminishes the capacity and resilience of healthcare in these regions. This problem is exacerbated by decades of sub-specialisation in that the lack of a broad general skill set negatively impacts regional, rural and remote area health care where staffing levels limit availability of specialist staff.
- The growing uneven distribution of doctors between generalist and specialist roles is not only a stress on the system financially (as specialists earn significantly more than GPs), it can also lead to sub-optimal health outcomes. A 2014 paper by Dr Anthony Scott of the Melbourne Institute of Applied Economic and Social Research, made the following observation:

"At the heart of health workforce shortages and surpluses is the inflexibility of health professional training and roles between different types of doctors and other health professionals. Arguments that inflexibility of roles and increasing specialisation are necessary to maintain quality are valid up to a point ... nevertheless, there is an increasing

consensus in Australia that we are past that point, that the gains in health outcomes from specialisation are now less than the health outcomes foregone created by inflexibility.”³⁷

Workshop participants expressed the view that the situation has only worsened since Dr Scott’s 2014 paper.

- Inequity in remuneration and incentivisation mechanisms can create a counter-productive workplace culture and politics within the clinical space, resulting in workforce inefficiencies. There are opportunities to employ new technologies to enable clinical service deliveries in innovative ways to ensure equitable distribution of workforce across Australia. This will require some cultural barriers to be addressed

The healthcare and social assistance sector of the Australian healthcare industry employs over 30% of the total healthcare workforce and represents the largest individual employment sector encompassing childcare, aged care, personal care and disability support. Challenges in this sector include the low level of baseline training and education amongst this workforce with low levels of qualification and a lack of upskilling opportunities. Existing generic training opportunities are not fit-for-purpose; expanded training and career pathways to meet the diverse requirements of the services are essential.

The MABEL report, *The Future of the Medical Workforce*, summed up the challenge of reform and change as follows, “Health workforce reform is slow and often resisted, which can stifle innovation and the flexibility required to be ‘fit-for-purpose’ in the future ... the medical workforce will need to adapt now in order to provide improved, value-based and more accessible healthcare in the future.”³⁸

Beyond the obvious direct delivery of healthcare in the broadest clinical sense, there is an urgent need for increased pharmaceutical and healthcare related manufacturing capacity which will have workforce implications. This topic will be addressed in more detail in the next section which discusses supply chain risks and vulnerabilities. However, if a decision is taken by governments to increase sovereign manufacturing capacity, existing shortcomings in workforce knowledge, skills and training capacity will be a significant impediment. The long-term exodus of manufacturing industry in Australia has eroded workforce numbers and the training infrastructure required to develop middle and higher-level skilled specialised workers. This exodus has exacerbated the growing disconnect between health-related research / education and the actual needs of Australian health sector manufacturing (where it still exists). There is also a lack of knowledge regarding existing industry capacity in Australia to meet the needs of critical healthcare materials and equipment; how do we increase capacity if there is no understanding of the baseline?

The COVID-19 crisis presents an opportunity to re-purpose sections of industry that are in decline, in order to develop viable healthcare manufacturing in Australia. Australian manufacturers could develop capacity in areas of critical healthcare dependency similar to the innovative business model of Civica Rx in the US; this is discussed further in the supply chain section of this report. There are also opportunities for the government to strategically invest in this space rather than primarily on the large “shovel-ready” infrastructure projects such as roads and bridges which will have little impact on our nation’s resilience against external supply chain shocks.

Section Six - Supply chain risks and vulnerabilities

Australia's supply chain for the entire range of healthcare products is incredibly complex and opaque. A resilient healthcare system needs to identify critical supply chains and assess their risks and vulnerabilities. There are, of course, national and international regulatory frameworks to ensure quality and ongoing supply. However, these were set up more than three decades ago. Are they still fit for purpose? The impact of the pandemic would suggest not. The journey to a stable and resilient supply chain, not even mentioning sovereign, is a long-term strategy that must start with the fundamentals – capability, capacity and desire to start the resource intensive investment journey.

Complex Supply Chains – the Opiate Example ³⁹

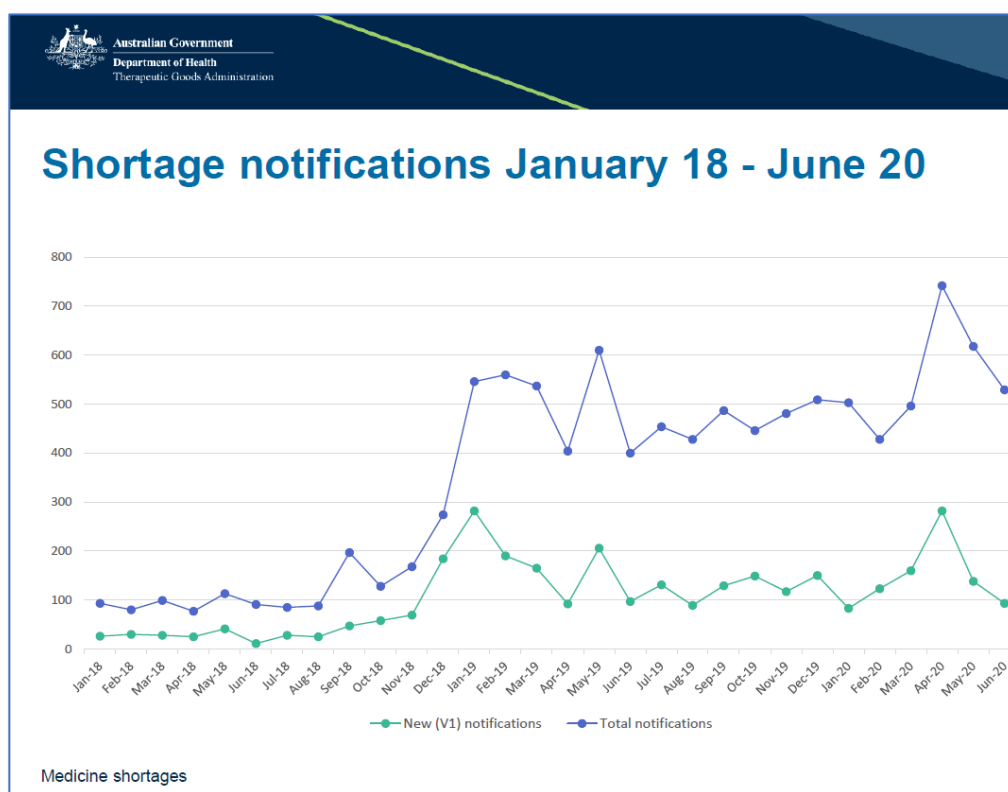
Australia grows around one-third of the world's opium poppies used to produce morphine, codeine, buprenorphine, and oxycodone that are familiar pain-killers to most Australians. Australian grown poppies are refined into APIs that are then flown overseas for final formulation and packaging. For example, a 10mg morphine ampoule used by clinicians is packaged overseas and then returned to Australia by air. These ampoules were in critical short supply during the pandemic as a result of the contraction of air freight during the COVID-19 pandemic.

Industry Minister Andrews has stated that “we currently export far too many raw materials that we have the potential to value-add to through processing and manufacturing.” There is an urgent need to undertake final production of these critical drugs in Australia and cease the practice of off-shoring final processing. Such a step would increase the resilience of the healthcare sector and provide an obvious export opportunity.

Medicine shortages are an ongoing global problem in most countries around the world, although some countries mandate stock levels to prepare for crisis situations.

Finland, through the Finnish Emergency Supply Fund, has mandated pharmaceutical stock levels to include all essential medicines to counter such potential crisis events. During the COVID-19 pandemic, such strategies have proven valuable to stabilise supply of essential medicines whilst most other countries have experienced shortages.

The Australian market for pharmaceuticals is possibly one of the most vulnerable in the OECD. The pandemic has clearly highlighted this underlying issue that was gradually progressing even before the pandemic, and from March 2020, our supply of medicines has experienced unprecedented shortages. This is a growing issue, with 86% of hospital pharmacists reporting shortages as a problem and 75% reporting that shortages have a negative impact on patient care according to Clinigen, a global medicines supply company.



The WHO *Joint External Evaluation (JEE) of International Health Regulations Core Capacities of Australia*⁴⁰, conducted over the period November – December 2017, highlighted a weakness in Australia that came to the fore during the pandemic. The report observed that “Australia is geographically isolated” with “limited onshore access to, and manufacturing capability for specialist medical countermeasures required to respond to national public health emergencies.”⁴¹ Indeed, under the heading “Areas that need strengthening/challenges”, the Mission Report said:

“All medical countermeasures held in the NMS [National Medical Stockpile] are manufactured overseas. Laboratory supplies and equipment are also produced offshore. Medical countermeasures cannot be procured ‘just in time’ within normal emergency (short) time frames because of manufacturing timelines, global market pressures and the complexity of the global supply chain.”⁴²

And so, it came to pass ... countermeasures could not be procured, there were pressures on the global market, and complex global supply chains failed. The Australian Department of Health’s own *Management Plan for Pandemic Influenza*⁴³, updated in August 2019, noted that during the “Preparedness Phase” to ensure resources would be ready for rapid response, it was necessary to “implement measures to support strong supply chains.”⁴⁴ Sadly, in this one vital area, Australia was **not** prepared and the, very public, scramble for PPE began. Other potential future threats to healthcare in Australia, e.g. bioterrorism, extreme climactic events, bushfires, will each have unique critical dependencies for provision of healthcare related to such events.

Why is this the case? It is because Australia is at the end of a very long global supply chain which makes the nation vulnerable to supply chain disruptions. The TGA acknowledged these supply chain risks in 2019,⁴⁵ when it noted the following:

- Australia accounts for only 2% of the global pharmaceutical market and imports over 90% of medicines. At times there may not be enough of a specific medicine in the Australian marketplace, leading to potential weaknesses in supply.
- Medicine shortages have become an increasing problem over recent years. The cause of medicine shortages is a complex and diverse interaction of many factors. Some medicines imported to Australia are only manufactured at one location, even if they are supplied by many companies. Other medicines may be manufactured in multiple locations but supplied by only one company.
- This makes Australia particularly vulnerable to medicine shortages arising from factors outside our control. These factors can include manufacturing problems, difficulties in procurement, political instability, pandemics, another global economic crisis and a range of natural disasters.

Unfortunately, our understanding of Australia's medicines supply chain is rudimentary.⁴⁶ The United States, our largest source of medicines, does not have a robust understanding of its supply chains; its vulnerabilities are not fully understood and no one agency seems to have responsibility or accountability. They have concluded that an over reliance on foreign production for critical medication is a national security risk. We would be foolhardy to think that our situation is any less risky.⁴⁷

In 2015, Infrastructure Australia identified the need for a national freight and supply chain strategy and the Australian Government agreed that such a strategy was necessary. Accordingly, in conjunction with the Council of Australian Governments (COAG) Transport and Infrastructure Council, a strategy was developed. However, the global supply chains that bring the freight to move around Australia, including pharmaceuticals, were not part of the assessment.

Of particular concern is the just-in-time nature of those supply chains. While just-in-time makes sound business sense, it makes Australians vulnerable to disruptions in the supply chain, be they inadvertent or deliberate. Furthermore, single-source distribution points in Australia are especially vulnerable and the flow-on effects of a disruption can be significant, especially when time and temperature sensitive medicines are being moved around the country. This latter point will come to the fore when our logistics systems come under immense pressure to deliver temperature controlled COVID-19 vaccines.

In 2017, The Society of Hospital Pharmacists of Australia found the five most common medicines regularly in short supply in Australia were antibiotics, anaesthetics, cardiology drugs, endocrinology drugs and chemotherapy. In June 2020 the TGA convened a working group to estimate the national medicines requirement for ICU management of COVID-19 patients.

Concerns had been raised that available supply of intensive care medicines may not meet an increase in demand resulting from a rise in COVID-19 cases requiring intensive care and ventilation as elective surgery recommenced. The group's modelling suggested that with an assumed increase of critical imported drugs of between 25 and 50% above "normal" consumption level approximately 350 individual COVID-19 patients could be accommodated across Australia in addition to elective surgery. This, in the middle of a pandemic with a massive increase in global drug demands? They did caveat the estimate stating that "Anticipated supply depends on future deliveries arriving in time and in full ... Unforeseen problems with manufacturing or increases in demand from other markets could affect the size or timing of these deliveries." ⁴⁸

With these critical drug shortages in mind, and the June 2020 TGA assessment of actual capacity of the Australian healthcare sector to manage ventilated COVID-19 patients, Health Minister Greg Hunt's interview on Sky News in April appears incautiously optimistic about ICU capacity:

"... we're going from 2,200 ventilators up to 4,400 from within the existing system. Then we've contracted ResMed, a great Australian firm that manufactures here in Australia, which is really important, to help add another 5,500. That will provide additional and spare capacity. We're expecting to have about 7,500 ventilator ICU beds that are ready and available for even the most difficult of circumstances..."⁴⁹

Whilst laudable, it would appear that the increased supply of ventilators may not have been able to be used to full effect given that the imported essential drugs were in short supply. Thankfully the rapid reaction to the pandemic and the lockdowns and travel restrictions prevented our limited hospital capacity from being overloaded. However, if COVID-19 numbers had continued to increase (as they have in other countries) the outcome could have been disastrous; this is not reflective of being "prepared" for what was a predictable crisis.

As previously discussed, the NMP has four pillars, one of which is ensuring timely access to medicines that Australians need, and one of which is maintaining a responsible and viable medicines industry. The COVID-19 pandemic has demonstrated failure in both of these pillars. There has been a lack of National strategic approach to resilience in healthcare supply chains that link manufacturing and industry, regulatory bodies, transparent articulation of critical dependencies and supply chains, education and workforce. Instead, there has been a complete reliance on the free market to resolve these challenges and allowance of corporate interests with primary profit motives to drive the policy agenda. As a consequence, over the past two decades there has been a progressive loss of resilience of low-cost medications and other consumables and equipment critical to the provision of basic healthcare to Australians.

An example of a business decision that will impact resilience took place in October 2020 when Pfizer announced that it would cease manufacturing at their Perth facility by 2023, with the loss of 470 jobs. Pfizer announced that the products currently produced at their Perth facility would be manufactured at their Melbourne facility, *as well as* other overseas sites.⁵⁰ Once again, Australia loses skills and expertise, and the sovereign manufacturing base continues to be eroded.

Australian legislation does mandate the protection of supply of essential medicines. The TGA is tasked with ensuring timely supply of medicines to Australians. However, the pandemic has demonstrated that the only mechanisms the TGA uses are to notify the healthcare industry of impending shortage and the use of short-track mechanisms that lower the level of regulatory requirement to allow the import of alternative critical medicines into Australia, for instance Special Access and Section 19A. Arguably, a lower regulatory hurdle has a potential impact on patient safety and product quality when compared to a product registration dossier which is thoroughly assessed by the local regulator. The TGA has no mechanisms other than these, and there appears to have been no dialogue between ministerial portfolios to address the risks resulting from the offshoring of the pharmaceutical industry. Reactive TGA measures are not a substitute for being prepared.

As previously stated, Australia has extremely limited and diminishing manufacturing capacity across all sectors of products apart from vaccine manufacture. There are some smaller industries with capacity for niche markets; however, government price regulation around the PBS has forced the

majority of off-patent product manufacturing off-shore. These represent the vast majority of life-saving medicines. As a benchmark, Australia only has a very limited capacity to manufacture any active pharmaceutical product for most of the products listed on World Health Organisation's list of Essential Medicines.

While it is not practical for Australia to become fully self-reliant, perhaps the resilience that would be provided by a level of indigenous, or more appropriately called “sovereign”, capability needs to be determined. Sovereign capability infers not only a manufacturing capability, but the appropriate research and development facilities and a skilled workforce. Such an understanding would require a nation-wide assessment of the critical medicines without which Australians would suffer significant health consequences. These are the consequences that could impact on a day-to-day basis in homes, at the doctor’s surgery and hospitals, and not just the events for which the national stockpile exists to mitigate.

Through strategic economic and policy investments in industry, healthcare resilience could be improved. An example of the industry potential in Australia can be seen in the local industry collaboration in Victoria when there was a surge in demand for PPE. A highly capable, competitive, but disaggregated manufacturing base successfully collaborated to rapidly respond to demand and averted critical shortages of masks and shields. More recently, the Federal Government announced an excellent initiative to secure the future supply of vaccines and products of national significance in conjunction with CSL / Seqirus. However, this approach needs to be applied much more broadly.

The COVID-19 crisis and the resulting difficulties in procuring essential medicines provides an opportunity for Government to reprioritise the factors it assesses in relation to industry support, health policy and pharmaceutical procurement. Retaining and modernising the facilities, skills and ability to manufacture critical medicines would ensure a continued supply of critical medicines without complete reliance on opaque and fragile offshore supply chains. Despite being in a resource retraction period, Governments around the world are taking active steps to increase resilience. Germany has mapped its pharmaceutical supply chain and they are now re-shoring manufacture of essential medicines. In the United States the Government is assisting a company by the name of Civica Rx ⁵¹ to transform America’s business-as-usual import dependent pharmaceutical ecosystem.

Civica Rx is a good example of an industry-based solution in the US to resolve the supply chain issues of essential off-patent medicines – a model that could be replicated in Australia, potentially in partnership with our New Zealand and Pacific Island neighbours.

Founded in 2018, Civica Rx brings together hospital and hospital pharmacy systems with local drug manufacturers to create a new economic model to prevent drug shortages and ensure a reliable supply of quality medicines at a fair price. Hospital/pharmacy systems become Civica Rx members allowing them to purchase medicines in predetermined volumes at transparent and stable prices.

This in-turn creates long term demand and pricing certainty for local manufacturers to stay in business. The Civica Rx model assesses the real cost of these essential medicines, factoring in the time hospital pharmacists, technicians and nurses spend sourcing short supply drugs or assessing safe and effective alternatives; time that would be better spent caring for patients.

Whilst the Civica Rx is an admirable example, it is reported to have taken more than a year to bring their first product to market which illustrates the complexities to set up a resilient supply chain and the difficulties to manufacture essential generic medicines.

The COVID-19 pandemic provides an opportunity to better understand the threats to global supply chains, and to review our critical healthcare vulnerabilities:

- As a consequence of surge in demand, there were predictable shortages of essential materials related to COVID-19; these were PPE, medical devices such as ventilators and medications directly related to the global pandemic.
- Given the global disruption to transport that resulted from the pandemic, there were also disruptions to other sectors of the pharmaceutical supply chain that were much less predictable, and drove a surge of short supply of medications unrelated to the pandemic eg hormone therapies and unrelated antibiotics.
- The past 3 to 5 years has seen increasing geopolitical instability between Australia's key trading partners, and the security of the healthcare supply chain has been implicated in the political fallout of these relationships.
- The NMS provides an opportunity to buffer shortages of critical material for healthcare. The Department of Health report, *PBS Pharmaceuticals in Hospitals Review*, of December 2017 noted that stakeholders "suggested that the stockpile be increased to include medicines in high demand to ensure continuity of supply. Stakeholders considered that even if this is bought at a premium, it would create more resilience in the Australian market."⁵² There are also successful overseas stockpiling models that could be examined to improve Australia's NMS, for instance the Finland Emergency Supply Fund⁵³.

This report focusses on the Australian Healthcare system; however, it would be beneficial to explore how these issues could be addressed in partnership with other regional countries such as New Zealand. A teamed approach to addressing common supply chain resilience issues makes intuitive sense. Discussions with New Zealand Government, Industry and Defence representatives in the workshops conducted for this report determined that such a model could prove valuable to all parties.

Imagine an Australia / New Zealand / Pacific island team formed to explore how collectively we could have a regional model of improved supply chain resilience for critical supplies, in this case for healthcare.

Section Seven - Opportunities for Australia's healthcare system

As previously noted, the COVID-19 crisis, and the resulting difficulties in procuring essential medicines, provides an opportunity for Governments to re-examine current models of healthcare to determine resilience and preparedness across multiple sectors of Australian society and industry. Federal and State/Territory governments should review legislation relating to healthcare to determine if these foundational acts and policies are fit-for-purpose for the second quarter of the 21st Century, and review how this legislation could be redefined to embed sustainability and resilience into healthcare.

Clearly, there will be a post-pandemic review of our response to better understand how current systems and practices in Australia have assisted or impaired progress in maintaining healthcare services and producing innovating solutions. These will ideally identify examples of public health successes such as the highly professional and dedicated service by our healthcare professionals, the leadership shown in the National Cabinet initiative, the rapid border shutdowns, contact tracing programs and the wide range of effective public health measures that were implemented.

Examples of failures, such as infections resulting from the Ruby Princess cruise ship, the Melbourne hotel quarantine breakdowns and in residential aged care facilities, need to trigger changes that result in better preparedness levels for such crises. There are also examples where rapid technical innovation occurred only to face regulatory, commercial and political barriers that obstructed the deployment of effective technology to health workers.⁵⁴ A review could also explore what the likely health effects of climate change will be in different parts of the country.

The review also needs to evaluate the performance of peak bureaucratic and governance bodies including the TGA, Medicare and health services in order to identify ways to improve the preparedness and ability of these organisations to adapt and respond rapidly to future crises.

There are clear opportunities to re-shape models of healthcare delivery in Australia to improve efficiency and effectiveness of dollar spend. Momentum from the COVID-19 pandemic can be used as leverage to enact such opportunities, and to act on what is already well-known. Examples include:

- Embracing new “contactless care” technologies, such as comprehensive hospital-in-the-home service delivery models that allow inpatient care to be delivered to peoples’ homes, telehealth services that reduce patient travel, all of which lead to overall improved equity of access regardless of where the care is delivered whilst reducing risks of centralised care such as infectious disease transmission.⁵⁵
- Using the example of success that public health interventions had in controlling the spread of the virus in Australia, compared to the lack of co-ordinated response, for instance, in the US. This could result in more strategic investment to strengthening public health legislation and to empower public health policy.
- Reduce investment in low-value care modes such as complementary medicines and therapies, and to counter over-servicing through fee-for service models of incentivisation.
- Refocus funding and clinical governance towards empowering lead clinicians working at the patient level of healthcare delivery, rather than at the level of health bureaucrats, as has been successfully implemented in the Netherlands with the Value Based Health Care (VBHC) model.⁵⁶
- A patient-centric approach, that is at the core of VBHC, was also identified as a reform option by the Global Access Partners Taskforce Report from 2019, *Ensuring the Sustainability of the Australian Health System*. The Taskforce recommended the funding of “equitable access to a patient-centred delivery model in primary care ... The GAP Taskforce recommends that a shift to consumer-centred funding models begin with chronic disease and over time be extended to primary care more broadly.”⁵⁷
- Acknowledging the negative impact that corporate lobbyists have on healthcare policy design and implementation and creating a governance framework and mechanisms to robustly address conflicts of interest and mitigate negative special interest group influence.

There are also opportunities for government policy to improve healthcare systems resilience by recognising the inter-related dependencies between manufacturing industry, education, training, workforce, and healthcare. Options for consideration include:

- Development of a strategic database of all Australian manufacturers and their capacity to produce healthcare related products.
- Engagement with Australian healthcare product manufacturers to develop policy, a workforce and the economic environment for growth and sustainability of that sector.

- Development of co-design innovation hubs that encourage clinicians, engineers, universities and industry to work collaboratively for local healthcare innovations and solutions.
- Building of a level of sovereign manufacturing capability and trusted international supply chain networks for essential supplies and critical materials across all areas of healthcare.
- Review of regulatory legislation to ensure that it allows for the potential to innovate rapid solutions to new problems, and that policy designed to protect doesn't in fact lead to harm – i.e. allowing new devices to be rapidly assessed and implemented in times of new health threats without being crippled by regulatory process.
- Review of failed regulatory legislation around delivery of essential medicines in order to understand how the intent of these policies failed.
- Explore the application of models of preparedness employed by the Australian Defence Force to the preparedness of our nation's healthcare systems.
- As mentioned in the previous section, working with New Zealand to develop a long term strategy and policy around how to incentivise health care organisations, local, regional and global, to want to invest in Australia and New Zealand. An opportunity also exists to leverage New Zealand's influence in the Pacific to explore collaboration for a regional manufacturing hub. For example, Fiji's pharmaceutical manufacturing facility in Nadi, owned by New Zealand company Douglas Pharmaceuticals.⁵⁸

An issue that should also get broader attention is the need to recognise the consumptogenic nature of healthcare in order to re-frame healthcare services around a broader perspective of sustainability. Such re-framing can occur when/as healthcare shifts to a model of prevention, patient empowerment and recognition of the social determinants of health. As one workshop participant noted: "our hospital funding models perpetuate consumption – activity-based funding pays for 'activity', not for discharge and de-prescribing." We need to face the reality of the challenge of maintaining the provision of high-quality healthcare into the future, and the steps that are needed to ensure that essential elements are protected.

Finally, there are opportunities for the Federal Government to review the performance of healthcare systems around the globe, in response to this pandemic and in preparing for future healthcare crises, to identify opportunities to embrace health and social policy mechanisms that have proven to be effective in other parts of the world. These include:

- European collective action on supply chains and manufacturing including Finland's strategic stockpiles policy, Germany's building of its' supply chain knowledge and the Nordic nations 2020 report entitled, *Critical Nordic Flows, Collaboration between Finland, Norway and Sweden on Security of Supply and Critical Infrastructure Protection*⁵⁹.
- The Civica Rx consortium business model as example of potential industry solutions to medication importation shortages.
- Singaporean social and taxation policy that entices adult children to live near their aging parents to improve elderly quality of life and reduce aged care expenditure.
- New Zealand's transparency regarding pharmaceutical country of origin labelling.

These opportunities are summarised at Annex A.

Section Eight - Communicating the Opportunities

Whilst there is clearly a need to reshape our healthcare system, there are fundamental bureaucratic and business blockages to building resilience, even though the knowledge and expertise to make this shift already exist across the healthcare sector. We need to listen to our experts, not just during a crisis but in preparing for the next one.

There are a multitude of options to address systemic issues in Australia's healthcare system; however, the communication of these opportunities is problematical. Although most health practitioners know what's needed, few are able to communicate it as the sector is often at odds with itself and competing for scarce resources. Healthcare culture and working models are stove piped with little flexibility for empowered action beyond narrow areas of responsibility. For example, few doctors can apparently express a view in public without approval from their respective hierarchies and media teams. This issue became evident in the series of workshops conducted to research this report.

Whilst there is clearly a need to reshape our healthcare system, there are fundamental bureaucratic and business blockages to building resilience, even though the knowledge and expertise to make this shift already exist within the healthcare sector. We need to identify those elements essential to ensure the health outcomes needed by Australians and then, cooperatively and collaboratively, determine how they are to be realised and maintained.

The next issue we need to face is honesty in communication. As stated earlier in this report, shared awareness of a situation or problem is essential if we, as a society, are to be able to deal with it; we must face reality. If the population receives mixed messages from different levels of government and subject matter experts, the outcomes will also be mixed and sub-optimal at best, or counter-productive at worst.

In June 2020, the Minister for Health stated "We went into it [the pandemic] ranked and assessed by the WHO as being one of the best prepared nations in the world for a pandemic ... we've come out of it with that reputation enhanced."⁶⁰ As previously discussed in Section 6 regarding supply chains, what the WHO also reported was that "Australia is geographically isolated" with "limited onshore access to, and manufacturing capability for specialist medical countermeasures required to respond to national public health emergencies" ... "All medical countermeasures held in the NMS [National Medical Stockpile] are manufactured overseas. Laboratory supplies and equipment are also produced offshore. **Medical countermeasures cannot be procured 'just in time' within normal emergency (short) time frames because of manufacturing timelines, global market pressures and the complexity of the global supply chain.**"

For the Health Minister to claim that the WHO assessed us being one of the best prepared nations in the world for a pandemic is misleading "marketing" and somewhat disingenuous.

We need to face reality and whilst boosting public confidence may be necessary in times of crisis, misleading political marketing will not help us be better prepared for the next, just more complacent.

Section Nine- Conclusions

Australia has world-leading universal healthcare coverage; however, the pandemic has also brought into sharp relief some of the inadequacies of the healthcare system in the broadest sense. We lack resilience because we do not adequately prepare for such predictable events. The professionalism of our health practitioners has been extraordinary; the problem does not lie with them. Rather the healthcare system as a whole has been found wanting.

Most people, given the tools, knowledge and support, would prefer to circumvent negative health outcomes in a cost-effective, compassionate and practical way. But they cannot do it alone – governments, communities, healthcare professionals and the medical-industrial complex must work together. In the aftermath of the pandemic, there will be the opportunity to review the Australian healthcare system and to identify means of improving healthcare resilience through increased preparedness. Now is the time to begin the process of analysing our non-negotiable needs as a nation and determining a level of sovereign capability appropriate to those needs.

Given the importance of the healthcare sector to our society, and the scale of investment required to function, such a review needs to be national, and teamed, to determine exactly what the issues are and the scale of the problem. As previously discussed, it is not practical for Australia to become fully self-reliant, but perhaps the resilience that would be provided by a level of local, or more appropriately called “sovereign,” capability needs to be determined. The global marketplace has a lot to offer. However, Australians must become smarter about maintaining a degree of capability in our own country for our own resilience. We must also begin the process of building a deeper understanding of our supply chains and shifting to a business model where those supply chains are transparent and verifiable.

The “just in time” market philosophy may have resulted in cost efficiencies in the healthcare sector, but it also resulted in significant resilience risks as we lost manufacturing capacity to the point where we now import more than 90% of our medicines, virtually all of our PPE and we have no stockholding mandates. We are an island nation, at the end of long global trade routes, heavily import reliant on just in time supply chains. We have limited resilience in those supply chains, and low tolerance for loss and disruption. Lower costs can come at a very high price in a crisis given that Australia is particularly vulnerable to trade disruptions in the global marketplace.

The most complex issues regarding Australia’s healthcare system are related to the structure, governance, culture, economics, and workforce which are managed in stove-pipes in a disaggregated system with little capacity to address future resilience and preparedness issues. The majority of people in the healthcare arena appear overloaded, dealing with daily issues and reacting to each crisis as it occurs.

Given the propensity of the Federal political level to market success and suppress discussion of risks and vulnerabilities for short term political gains, the leadership in this arena will need to come from those in our nation who are actually delivering healthcare to our people. That is at the State/Territory and Hospital / Industry levels. A willingness to act together for the common good to achieve shared goals can only be built through practice and demonstration.

Our politicians have rightly applauded our nation’s health workers outstanding performance and dedication to their duties throughout the pandemic. However, plaudits are not enough. We need leaders at these levels to demonstrate this willingness to work together and then to act. To quote

Henry Kissinger from April 2020 in the early stages of the pandemic: “Nations cohere and flourish on the belief that their institutions can foresee calamity, arrest its impact and restore stability ... The historic challenge for leaders is to manage the crisis while building the future.”⁶¹

We, as a society, owe it to our healthcare professionals to do whatever it takes to enable and empower them to do their jobs, to ensure our healthcare system is genuinely resilient. The health and wellbeing of all Australians, and therefore the security of our nation, depend on it.

Annex:

A. Summary of Healthcare System Opportunities

Attachment:

1. Workshop Participants

Endnotes:

- ¹ https://www.unisdr.org/files/26462_8.annex2andacronyms.pdf
- ² Examples of such erosion are discussed in the IIER-Australia reports at - <https://www.jbcs.co/#/iieraust/>
- ³ Department of Home Affairs National Resilience Task Force, Profiling Australia's Vulnerability: the interconnected causes and cascading effects of systemic disaster risk, 2018 <https://www.aidr.org.au/media/6682/national-resilience-taskforce-profiling-australias-vulnerability.pdf>
- ⁴ Royal Commission into National Natural Disaster Arrangements Report, Commonwealth of Australia, 28 October 2020, p. 7, <https://naturaldisaster.royalcommission.gov.au/system/files/2020-11/Royal%20Commission%20into%20National%20Natural%20Disaster%20Arrangements%20-%20Report%20%20%5Baccessible%5D.pdf>
- ⁵ <https://www.oecd.org/coronavirus/en/data-insights/intensive-care-beds-capacity>
- ⁶ 'Natural Disasters are expected to become more complex, more unpredictable, and more difficult to manage. We are likely to see more compounding disasters on a national scale with far-reaching consequences. Compounding disasters may be caused by multiple disasters happening simultaneously, or one after another. Royal Commission into National Natural Disaster Arrangements Report, Commonwealth of Australia, 28 October 2020, p. 22,
- ⁷ <https://www.dropbox.com/s/72hsc8uy5zfmixk/IIER-A%20Resilience%20%20Briefing%20%20-%20Apr%202020.pdf?dl=0>
- ⁸ The Pharmaceutical Benefits Scheme – an overview. https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/pbs. Accessed 3/12/2020
- ⁹ Budget 2020, Guaranteeing the Essential Services, Health, <https://budget.gov.au/2020-21/content/essentials.htm#one>
- ¹⁰ Simons M. Why Australia runs out of vital medicines. The Saturday Paper, October 10, 2020
- ¹¹ <https://www.legislation.gov.au/Details/F2018L01679>
- ¹² <https://www.industry.gov.au/news/meeting-our-needs-in-times-of-crisis>
- ¹³ Consumers Health Forum of Australia 2020, Consumers Commission Report, *Making Health Better Together*, November 2020, p. 17
- ¹⁴ <https://www.abs.gov.au/ausstats/abs@.nsf/mediareleasesbyreleasedate/B611DFF5E8590F8ACA2581BF001F743B?OpenDocument>
- ¹⁵ The CEO of pharmaceutical giant Merck, Mr Ken Frazier, in an interview with Harvard Business School on 13 July 2020, said: 'We were so unprepared for this pandemic. It's not even funny on so many levels.'
- ¹⁶ Department of Health, *Pharmaceuticals in Hospitals Review*, Final Report, Australian Healthcare Associates, December 2017, p. 13
- ¹⁷ Quilty et al. A Pandora's box: sustainable pharmaceutical supply. *Medical Journal of Australia*, 195(9), 2011.
- ¹⁸ Badger-Parker T et al. Low-value care in Australian public hospitals: prevalence and trends over time. *British Medical Journal Quality and Safety*, 2019.
- ¹⁹ Longden T, Van Gool K. Supplier-induced demand for urgent after-hours primary care services. *Health Economics*, 2018.
- ²⁰ After-hours corporate wins PSR court battle, *Australian Doctor News*, 25 March 2020
- ²¹ <https://data.oecd.org/healthres/doctors.htm#indicator-chart>
- ²² <https://www.oecd-ilibrary.org/sites/0acc1895-en/index.html?itemId=/content/component/0acc1895-en>
- ²³ ANZ-Melbourne Institute, Health Sector Report, *The Future of the Medical Workforce*, Professor A. Scott, 2019, p. 4 https://melbourneinstitute.unimelb.edu.au/data/assets/pdf_file/0008/3069548/ANZ-MI-Health-Sector-Report-Future.pdf
- ²⁴ Global Access Partners, GAP Taskforce Report 2019, Ensuring the Sustainability of the Australian Health System, p. 1, https://www.globalaccesspartners.org/AustraliaHealth2040_GAPTaskforceReport_Jul2019.pdf
- ²⁵ Consumers Health Forum of Australia 2020, Consumers Commission Report, *Making Health Better Together*, November 2020, p. 23
- ²⁶ <https://www.governanceinstitute.com.au/resources/what-is-governance/>
- ²⁷ <https://www.mja.com.au/journal/2018/bad-behaviour-healthcare-needs-evidence-based-solutions>
<https://insightplus.mja.com.au/2019/9/endemic-bullying-narcissistic-personality-disorder-in-medicine/>
- ²⁸ OECD, Health at a Glance, 2019, Remuneration of Doctors (general practitioners and specialists), <https://www.oecd-ilibrary.org/sites/0acc1895-en/index.html?itemId=/content/component/0acc1895-en>
- ²⁹ Global Access Partners, GAP Taskforce Report 2019, Ensuring the Sustainability of the Australian Health System, p. 23, https://www.globalaccesspartners.org/AustraliaHealth2040_GAPTaskforceReport_Jul2019.pdf

-
- ³⁰ The National Medicines Policy has four central objectives based on active and respectful partnerships, taking into account elements of social and economic policy. These central objectives, also referred to as the four pillars of the National Medicines Policy are:
- timely access to the medicines that Australians need, at a cost that individuals and the community can afford;
 - medicines meeting appropriate standards of quality, safety and efficacy;
 - quality use of medicines; and
 - maintaining a responsible and viable medicines industry.
- ³¹ <https://www1.health.gov.au/internet/main/publishing.nsf/content/national+medicines+policy-1>
- ³² <https://www1.health.gov.au/internet/main/publishing.nsf/Content/pbs-reform-report>
- ³³ Department of Health, *Pharmaceuticals in Hospitals Review*, Final Report, Australian Healthcare Associates, December 2017, p. 107
- ³⁴ <https://www.theguardian.com/business/2018/sep/25/pharmaceutical-industry-donates-millions-to-both-australian-political-parties>
- ³⁵ <https://www.nytimes.com/2020/11/22/health/Covid-ventilators-stockpile.html?referringSource=articleShare>
- ³⁶ Melbourne University, Medicine in Australia: Balancing Employment and Life (MABEL), Australia's National Longitudinal Survey of Doctors, <https://melbourneinstitute.unimelb.edu.au/mabel>
- ³⁷ Consumptogenic systems are ones that promote the consumption of goods and services to the detriment of either population or environmental health.
- ³⁸ Dr. A. Scott, Getting the balance right between generalism and specialisation, does remuneration matter?, Australian Family Physician, Vol. 43, No. 4, April 2014
- ³⁹ ANZ-Melbourne Institute, Health Sector Report, *The Future of the Medical Workforce*, Professor A. Scott, 2019, p. 5 https://melbourneinstitute.unimelb.edu.au/_data/assets/pdf_file/0008/3069548/ANZ-MI-Health-Sector-Report-Future.pdf
- ⁴⁰ The Hon Karen Andrews, Minister for Industry, Science and Technology, Address to the National Press Club, 20 May 2020, <https://www.minister.industry.gov.au/ministers/karenandrews/speeches/national-press-club-address-canberra> & McAlister S, Ou Y, Neff E, et al. The Environmental footprint of morphine: a life cycle assessment from opium poppy farming to the packaged drug. *BMJ open* 2016; 6: e013302
- ⁴¹ World Health Organisation, *Joint External Evaluation of IHR Core Capacities of Australia, Mission Report*, 2018, Geneva. <https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1>
- ⁴² ibid p. 53
- ⁴³ ibid p. 54
- ⁴⁴ Australian Government, Department of Health, *Australian Health Management Plan for Pandemic Influenza*, August 2019, [https://www1.health.gov.au/internet/main/publishing.nsf/Content/519F9392797E2DDCCA257D47001B9948/\\$File/w-AHMPPI-2019.PDF](https://www1.health.gov.au/internet/main/publishing.nsf/Content/519F9392797E2DDCCA257D47001B9948/$File/w-AHMPPI-2019.PDF)
- ⁴⁵ ibid p.69
- ⁴⁶ <https://www.tga.gov.au/sites/default/files/consultation-reforms-generic-medicine-market-authorisation-process.pdf> *Reforms to the generic medicine market authorisation process, Consultation paper section Need for a Robust Supply of Medicines in Australia, Version 1.0, February 2019*
- ⁴⁷ Simons M. Why Australia runs out of vital medicines. The Saturday Paper, October 10, 2020
- ⁴⁸ <https://www.jbcs.co/iieraustralia-health>
- ⁴⁹ <https://www.tga.gov.au/critical-medicines-supply-modelling-supports-return-elective-surgery>
- ⁵⁰ The Hon Greg Hunt, Minister for Health, Transcript of Interview with Tim Gilbert on Sky News Saturday Edition, 4 April 2020, <https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/interview-with-tim-gilbert-on-sky-news-saturday-edition-about-covid-19>
- ⁵¹ WA Today, *Hundreds of Jobs at Risk as Pharmaceutical giant confirms it is pulling out of Perth*, 20 October 2020, <https://www.watoday.com.au/national/western-australia/hundreds-of-wa-jobs-at-risk-as-pharmaceutical-giant-confirms-it-is-pulling-out-of-perth-20201020-p566t8.html>
- ⁵² <https://civicarx.org/>
- ⁵³ Department of Health, *Pharmaceuticals in Hospitals Review*, Final Report, Australian Healthcare Associates, December 2017, p. 66
- ⁵⁴ The Finnish National Emergency Supply Agency (NESA), is tasked with measures relating to developing and maintaining security of supply. The state holds stockpiles of materials necessary to ensure the population's welfare and the functioning of the economy in the event of major crises. The state-owned stockpiles are used to maintain viable production of energy, food, and health-care services. The costs associated with security of supply

-
- in Finland are covered centrally by way of the extra-budgetary National Emergency Supply Fund, managed by the NESÄ. <https://www.nesa.fi/organisation/the-national-emergency-supply-agency/>
- ⁵⁴ ‘Pram’ hoods a local invention to protect against coronavirus, On the Record, 5 October 2020, <https://otr.anmfvic.asn.au/articles/pram-hoods-a-local-invention-to-protect-against-coronavirus>
- ⁵⁵ In July 2020, in response to concerns raised by the Royal Australian College of General Practitioners (RACGP), the Government restricted telehealth services under the Medicare Benefits Schedule (MBS) through their regular GP or practice – where they have been an active patient within the past 12 months – or through a referred non-GP specialist. The RACGP cautioned the public against using services disconnected from their regular GP or practice, highlighting the increased risk for inappropriate practice and fragmented care. <https://www1.racgp.org.au/newsgp/professional/government-restricts-telehealth-mbs-access-to-pati>
- ⁵⁶ Health professionals in the Netherlands have spent the last few years working with patients to determine the outcomes that matter to them the most. It’s part of a growing trend in healthcare to take more account of the views and preferences of patients, and encourage people to make their own judgments about which care they receive. Exponents of this method say medical interventions should help patients live longer, but also deliver broader wellbeing. There is now a number of experiments in this field in the Netherlands, where satisfaction with the health service is already above the OECD average. Outcome based healthcare is being piloted at clinics and hospitals around the country, with teams collecting and analysing data on how budgets are spent, and what results they’re getting. <https://sciencebusiness.net/report/dutch-push-reframe-healthcare-around-patients>
- ⁵⁷ Global Access Partners, GAP Taskforce Report 2019, Ensuring the Sustainability of the Australian Health System, p. 4, https://www.globalaccesspartners.org/AustraliaHealth2040_GAPTaskforceReport_Jul2019.pdf
- ⁵⁸ Douglas Pharmaceuticals, <https://douglas.co.nz>
- ⁵⁹ Critical Nordic Flows, Collaboration between Finland, Norway and Sweden on Security of Supply and Critical Infrastructure Protection, Commissioned by the Finnish National Emergency Supply Agency; the Norwegian Ministry of Trade, Industry and Fisheries; and the Swedish Civil Contingencies Agency; Publisher National Emergency Supply Agency Helsinki, March 2020, <https://cdn.huoltovarmuuskus.fi/app/uploads/2020/04/21161811/Critical-Nordic-Flows.pdf>
- ⁶⁰ Health Minister Greg Hunt on the ABC Insiders program, 14 June 2020
- ⁶¹ <https://www.wsj.com/articles/the-coronavirus-pandemic-will-forever-alter-the-world-order-11585953005>

Summary of Healthcare System Opportunities

Essentials	Federal and State/Territory governments in consultation with the healthcare sector and community groups need to define the metrics of what is essential for the health and wellbeing of Australian with a strong emphasis on prevention and the social determinants of health.
	The Federal government to conduct an assessment of the National Medical Stockpile with a view to including medicines that are in high demand to ensure continuity of supply and create further resilience in the Australian market. The Finnish Emergency Supply Fund provides an excellent stockpiling model.
Economics	Department of Health to review the impact of corporates entering the health sector with a view to understanding the implications of bulk-billing and the growing expenditure within Medicare.
	Federal, State and Territory governments to fund public and private healthcare sectors in optimising and integrating technology and health data to better understand healthcare expenditure and deploy available technologies such as 'contactless care' more widely for greater efficiencies and equitable access.
	Federal and State/Territory governments to refocus funding and clinical governance using a Value Based Health Care Model (VBHC) with patient-centric funding, similar to the Netherlands VBHC system. Such a system would facilitate patient / clinician empowerment and achieve economic efficiencies while optimising health outcomes.
	Federal Government to reduce investment in low-value care models such as complementary medicines and therapies and to counter over-servicing through fee-for-service models of incentivisation.
	Federal and State/Territory governments to explore opportunities to improve efficiency through enhanced regulations and auditing of healthcare systems and resources.
	Federal and State/Territory governments to consider a single-funder model of medicines that could mitigate the current duplication in systems and reduce inefficiencies.
Culture	Government to develop a national, teamed review (federal, state, territory, public, private) to determine the cultural issues, and the scale of these issues, across the healthcare sector with a view to developing an appropriate program to address the problems.
	Health sector peak professional bodies to review the generalist versus specialist doctors divergence with a view to optimising the integrity of primary care: preventative healthcare, basic diagnostics, essential medications and chronic disease management.
	State/Territory governments, health sector peak professional bodies, public and private sector representatives to review inequity in remuneration and incentivisation mechanism which are creating a counter-productive workplace culture and politics in the clinical workspace.
	Clinicians, engineers, universities and industry to work collaboratively to establish co-design innovation hubs for the development of indigenous healthcare solutions.

	State/Territory governments and health sector peak professional bodies to review the uneven distribution of clinical workforce across Australia with a view to determining a method of building healthcare resilience in regional, rural and remote locations.
Governance	Federal and State/Territory governments to strengthen public health legislation to optimise coordination across jurisdictions to enable consistent management of nation-wide public health events.
	Federal and State/Territory governments to develop a formal mechanism to ensure standardisation of healthcare systems and outcomes across jurisdictions.
	Federal government to develop a governance framework around the lobbyist industry to ensure transparency of influence in the decision-making process regarding subsidisation of, and access to, pharmaceuticals. High-value, low-cost medications are being squeezed out of the market by high-cost, low-value pharmaceuticals.
	Federal government, in consultation with sector regulators, to review legislation to optimise innovation and rapid solutions to problems.
	Federal government, in consultation with sector regulators, to conduct a review of the failed regulatory legislation around the delivery of essentials medicines.
	Federal, State/Territory governments, healthcare sector peak bodies and industry to review Australian Defence Force models of preparedness for application across the nation's healthcare systems.
Supply Chains / Industry	Federal government to reprioritise health policy in relation to industry and pharmaceutical production to support the modernisation of facilities, reinvigoration of manufacturing skills and training to ensure the capacity for critical medicine production in Australia.
	Federal government in consultation with industry to develop a strategic database of all Australian manufacturers and their capacity to produce healthcare related products and pharmaceuticals.
	Federal government in consultation with industry develop policy, a skilled workforce, and the economic environment for growth and sustainability of the sector.
	Federal government to support the building of a level of sovereign manufacturing capability, coupled with a network of trusted international supply chains (imports) and distribution networks (exports) to ensure essential supplies and critical materials across all areas of healthcare.
	All levels of government, in consultation with Industry, explore options to develop regional manufacturing / trading opportunities to optimise resilience eg Australia, New Zealand and the Pacific.
	Federal government to conduct a review of international models to identify opportunities / lessons for Australia. For example:
	<ul style="list-style-type: none"> • the Finnish Emergency Supply Fund strategic stockpiles; • the German governments analysis of their supply chain vulnerabilities; • the Nordic nations Critical Nordic Flows Collaboration for supply and infrastructure protection; • the US Civica RX pharmaceutical consortium model; • Singaporean social and taxation incentives to entice adult children to live near their aging parents; • New Zealand's transparency of pharmaceutical country of origin labelling

Workshop Participants

A total of 30 health sector and two national security professionals participated in the workshops.

The Individuals listed below have agreed to be identified. Their listing should not be interpreted as their personal agreement with all aspects of this report, nor necessarily representing the organisations they are associated with.

Health Sector:

Professor Don Campbell, Royal Australian College of Physicians

Gavin Fox-Smith, Vice President for Johnson & Johnson Medical Devices Asia Pacific.

Samuel Goodwin, Alice Springs Hospital

Martin Henschel, Deakin University

Dr Arnagretta Hunter, Australian National University

Dr Jia-Yee Lee, University of Melbourne

Thomas Longden, Australian National University

Professor Andrew McLachlan, University of Sydney

Dr Forbes McGain, Western Health

Dr Robert Pearce, John Hunter Hospital, Newcastle

Dr Simon Quilty, IIER-A, Australian National University

Dr David Sparling, IDT Australia

Andre Vlok, Phebra

Steve Zanon, Proactive Ageing

National Security Sector:

Air Vice-Marshal John Blackburn AO, (Retd), IIER-Australia

Anne Borzycki, IIER- Australia