

# Health and Medical Industries

Sector Plan  
2020 to 2030



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# Ministerial foreword



**South Australia is a state with innovation, ingenuity and collaboration in our DNA. It's this approach that has helped create one of the world's most exciting bio-medical precincts and put the Health and Medical Industries sector at the forefront of our state's economic growth.**

The Health and Medical Industries (HMI) sector, one of the nine key sectors for economic growth, is one of the newest but fastest growing sectors in the state. We are responding to the challenges of boosting the economy and showcasing South Australia's remarkable health and medical capabilities to the world. With our new \$3.8 billion Adelaide BioMed City, we have one of the largest medical precincts in the Southern Hemisphere, providing investors the opportunity to base their business amongst some of the brightest minds in biotech and clinical trials, digital health and medical devices as well as the ageing well industry.

We are building an economy where there are opportunities for all South Australians, creating an environment where entrepreneurs can thrive and where innovation is standard practice. Promoting our capabilities and research facilities in the Health and Medical Industries sector has never been more important as the state emerges as a COVID-19 safe state and offers investors continuity of business operations.

To support the development of the HMI sector the Government, through the Department for Trade and Investment (DTI), brought together leaders from across the health and medical industries and academia, to participate in the 'HMI Ministerial Advisory Panel', to provide advice on the sector in South Australia.

With the guidance of these sector leaders, a discussion paper was released for consultation in October 2019. This consultation process, together with the work of the Ministerial Advisory Panel, has resulted in the development of this HMI Sector Plan.

As a government, we are committed to working collaboratively with industry. My department, through the Health and Medical Industries team, will facilitate the projects which support the economic growth of the sector and the state.

The Sector Plan looks forward to 2030 with a target to more than double the HMI economic contribution to South Australia, increasing its value from \$2.3 billion to \$5 billion.

Ongoing development is essential, and we will have a planned and flexible approach as new technologies are developed and the sector adapts and grows. This strategy will be reviewed on a regular basis to ensure we are continually delivering the programs and projects which will create a successful environment for the Health and Medical Industries sector to thrive.

South Australia is open for business and at the forefront of world-leading capabilities, bio-tech precincts and an academic research ecosystem that makes it the ideal place to invest and do business.

**The Hon. Stephen Patterson MP**  
Minister for Trade and Investment

# Executive summary

## South Australia is rich in many ways. Attracting brilliant minds from all over the globe, we are a place of connection for future-focused industries – including Health and Medical Industries (HMI).

The sector is at the forefront of new and innovative technologies, challenging us to find new ways to engage with and grow businesses within South Australia.

South Australia's HMI industry has led this plan's development, through open consultation and through the Health and Medical Industries Ministerial Advisory Panel (HMI MAP) that directly advises the Minister on industry's vision for the future.

The HMI MAP is drawn together from industry, academia and government leaders within the sector, and representing the various subsectors across the sector.

Consultation commenced in October 2019 with the release of an industry Discussion Paper on the YourSAy website. A series of workshops with industry, peak bodies and research groups supported the development of a first draft 'sector strategy' which was released for consultation in May 2020. The first draft was broadly endorsed by industry.

This final Sector Plan reflects the work and vision of the sector as it has developed over the past twelve months and this has been endorsed by the HMI MAP as the direction for growth.

Through the consultation industry has consistently identified three key enablers for growth:

- Industry Connectivity Initiative (ICI) – Industry driven, becoming the industry voice, collating industry data
- Clinical trials – SA Health Clinical Trials Portal – increased attraction of international multi-centre trials, reporting on clinical trial capability and capacity in South Australia
- Ageing well and care sector – growing international contracts, increasing projects in South Australia with international partners, building on the \$427 million existing health and aged care services export and driving the NDIS participation from the current \$1.1 billion.

The COVID-19 global pandemic has had a significant impact on HMI as well as the global economy. We've outlined the short and long-term opportunities and challenges associated with the post-COVID-19 economy – all other aspects of the strategy are designed around South Australia's recovered economic position.

We can better capitalise on our local networks as well as expand our knowledge and capability, locally and internationally. The government will help develop a capability platform to connect and promote the strengths of HMI in the state and drive growth.

Our global partners need to be able to tap into the state's available resources. A single, clear entry point for industry to engage with government will make this easier. The Department for Trade and Investment (DTI) is the industry-facing public sector agency and will drive reforms to support the creation of such a single-entry point.

South Australia is home to outstanding researchers in research institutes, universities and industry. Better researcher–industry interaction will help to develop our capabilities, capacity and drive exports.

South Australia has several key health and medical hubs, including vital infrastructure within Adelaide BioMed City and the Flinders Precinct. Identifying our marketable capabilities and supporting entry into new international markets will help us capitalise on these infrastructure investments and connections with other industry hubs. This will drive growth and promote our expertise globally.

Specifically, the state will capitalise on our reputation and demonstrated leadership in the ageing well space, with increased international investment and the development and commercialisation of innovative products for export markets. The National Disability Insurance Scheme (NDIS) offers an opportunity for South Australia to increase funding to the state and attract business investment and growth.

Our global connections will be boosted through our international trade offices, including our Houston office which provides a direct link to the world-renowned Texas Medical Center.



Working in collaboration with the Hi-tech sector, opportunities for the expansion of disruptive technology including artificial intelligence (AI) applications will be developed.

The work within SA Health on clinical trials will be enhanced by the single point of entry for clinical trials in the state and improved data capture and reporting. The industry feedback indicated that our clinical trial efforts should be expanded into regional and rural areas as well as the ageing well and care subsector to capitalise on federal initiatives. Metropolitan and regional activities will be delivered via a streamlined system that will include private hospital and primary healthcare environments. Clinical trials across the sector, including biotechnology, pharmaceutical, nutraceutical and medical technology will be focal points.

There will be a continued effort to market our expertise globally. We will also continue to develop local talent, including a pool of principal investigators and clinical research coordinators through improved access to Good Clinical Practice (GCP) training.

The focus on developing a cohesive, collaborative sector, with a reinvigorated clinical trial environment and work across the care sector, will broaden opportunities in the seven HMI subsectors. These opportunities include education and training, digital health platforms, research commercialisation, and research and development capabilities. Together, these will help South Australia achieve sustainable industry growth.

There will also be a focus on streamlining access to the state, marketing ourselves globally and connecting industries. Improving collaboration within industry and between universities, government and industry will expand the opportunities for economic growth, not just within HMI but across the creative industries, defence, education, food and agriculture, hi-tech, minerals and energy, space and tourism sectors.

As a result of the various initiatives mentioned, the industry expects that the HMI economic contribution to South Australia will more than double from the current \$2.3 billion to \$5 billion in 2030.

South Australia has all the right ingredients to grow the economy in these vital sectors – the challenge is to bring these facilities and concepts together, complement our clinical and pre-clinical research capabilities, and bring about the economic growth through our collaborative ecosystem.

Health and medical industries are growing globally, and South Australia is well-positioned to take its place as a centre of excellence for health and medical innovation.

# Executive summary (cont)

The sector plan looks forward to 2030, targeting key enablers to increase the value the health and medical industries contribute to the South Australian economy from \$2.3 billion to \$5 billion.



Health and Medical Industries expected to more than double to

**\$5 billion in 2030**

## First enablers of growth



Industry Connectivity Initiative (ICI)



Clinical trials

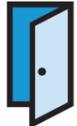


Ageing well and the care industry

## Collaborations for growth



Developing our networks



Opening our doors



Promoting our strengths



Responding to disruptive ideas

## HMI subsectors



Ageing well and the care industry



Biotechnology



Clinical trials



Digital health



Medical devices



Nutraceuticals and traditional medicine



Pharmaceuticals

Currently, the Health and Medical Industries' contribution to the South Australian economy is:



**\$4.2 billion** total expenditure (or incomes)



**\$876 million** overseas and interstate exports



**\$2.3 billion** direct contribution to GSP



**23,789 people** directly employed



**2.1%** of all South Australians employed



**\$870 million** indirect contribution

# First enablers of growth

Industry has identified three key targets: a cohesive industry presence (Industry Connectivity Initiative), renewed clinical trial arrangements and growth in the care sector. Working to these targets will have a sector-wide impact, build industry capability and scale, energise the industry, and drive the HMI sector forward. Their achievement will have an impact across all subsectors and support wholistic economic growth.

## Industry Connectivity Initiative (ICI)

### An ICI to be established to coordinate the sector

Capability development and promotion, including establishing a Health and Medical Industries Connectivity Initiative (ICI), will help develop a cohesive and coordinated HMI sector with improved linkages between all subsectors.

This industry-led connectivity initiative will support and sustain HMI, with members from industry, industry associations and research institutions. This body will become the industry voice to all levels of government, stakeholders and the broader community. This will enhance cross-sector collaborations across universities, government and industry. It will also provide an opportunity for university students to connect with industry.

The government will help develop: the ICI; a mechanism for capability identification and growth; and the growth of export market opportunities as well as promote investment in local industry.

Once established, this initiative will help collate industry data, including industry sentiment surveys. The success of the initiative will be determined by industry take-up, the number of events held and event attendance.

## Clinical trials

### Increased clinical trials through streamlined processes

South Australia will benefit from increased clinical trial investment as there will be a single point of entry for clinical trials by SA Health and private health providers. A streamlined clinical trial process will further enhance the state's positioning, along with access to key researchers and facilities. A sound clinical trial framework will support the subsectors.

Industry will continue to investigate opportunities to have visibility of demographic data, indicating patient cohort availability allowing industry to attract more trials to South Australia.

In March 2020, Adelaide had 741 active clinical trials registered on [www.ClinicalTrials.gov](http://www.ClinicalTrials.gov). Of these, more than 650 had patient cohorts including people aged over 65, a key patient cohort in South Australia. The number of trials undertaken in South Australia will increase with the successful development of the clinical trials environment.

The SA Health Clinical Trials Portal will support increased reporting on clinical trial uptake in South Australia and provide insight into key research themes in the state.

## Ageing well and care sector

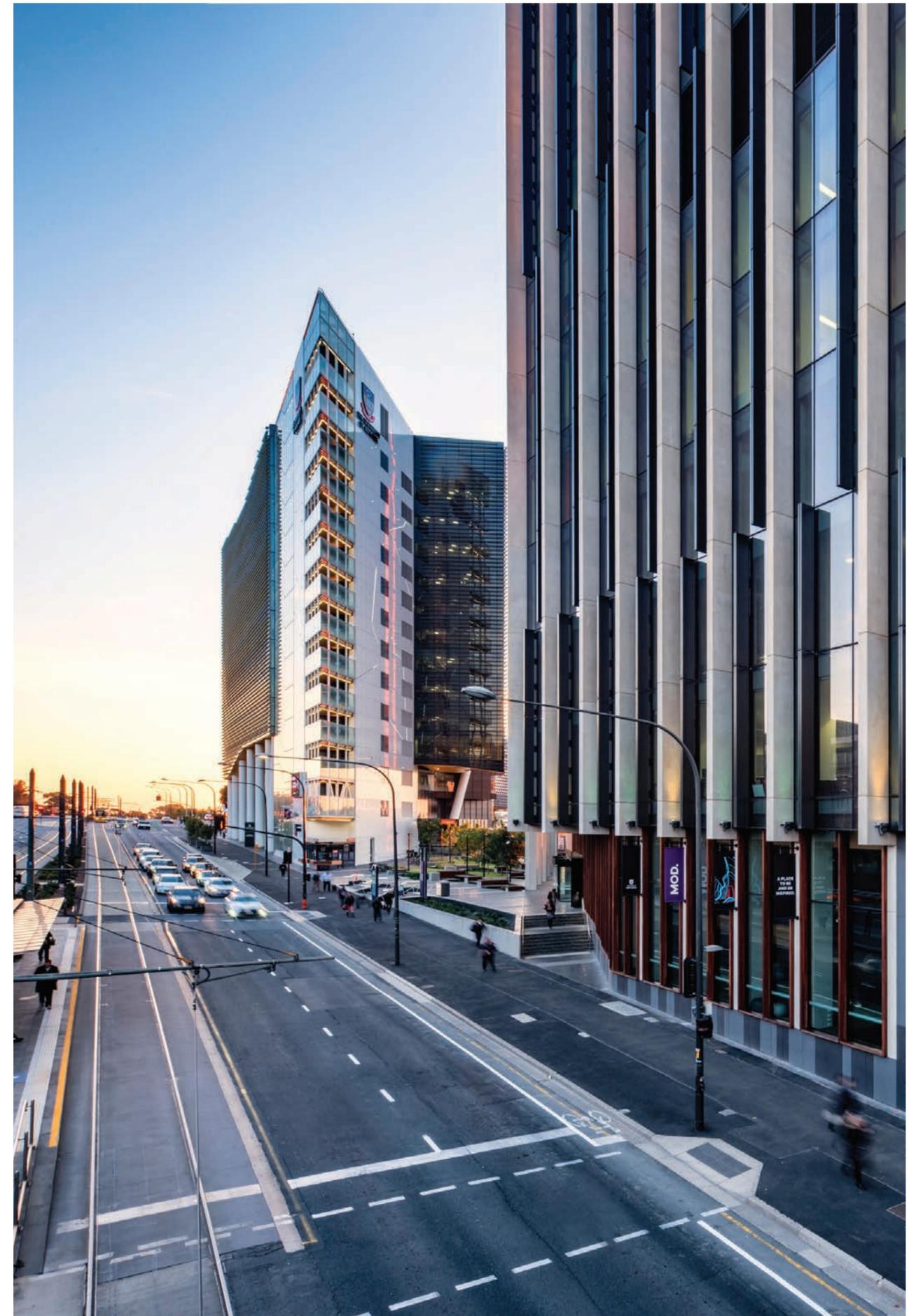
### Growing the care sector through leveraging funding opportunities

The opportunities for investment in the care sector will be recognised through support by Commonwealth initiatives such as the NDIS, and with the reinvigorated clinical trial environment. There will be growth in funding to the care sector that will support increased industry participation.

Industry growth will provide opportunities for local companies to market their expertise nationally and open new international markets. This will grow markets for our ageing well organisations, digital health, and assistive technology companies as well as supporting the pharmaceutical, nutraceutical and clinical trials subsectors.

The success will be measured through the industry sentiment survey, the growth in the value of international contracts by South Australian-based businesses, and an increase in the number of projects based in South Australia with international partners. These investments and exports will be supported by the development of disruptive innovations in healthcare.

Growth in the NDIS funding into the state and the number of local businesses registered for NDIS will also be measured.



# South Australia's advantages

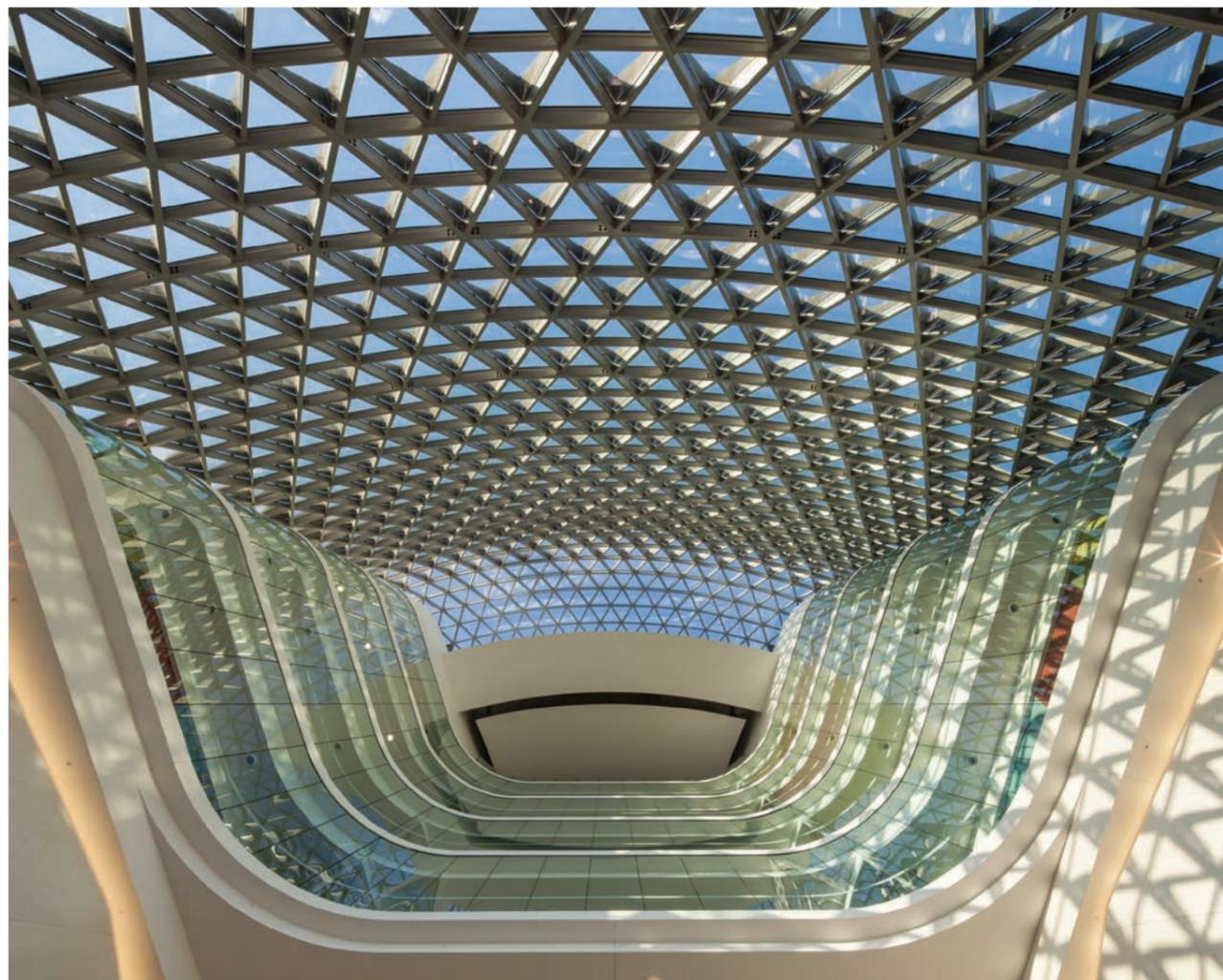
**S**outh Australia is a competitive, thriving destination with an ecosystem that supports business and innovation. We facilitate research and development and offer strong intellectual property protection.

South Australia also has a strong record of supporting inbound investment as well as promoting our capabilities to international markets.

We are well placed in the Asia Pacific region and we can reach global partners through our network of international trade and investment offices, offering incentives for companies wanting to establish in South Australia.

The cost of doing business in South Australia is low. The KPMG 2016 Competitive Alternatives data shows that South Australia is significantly cheaper than the eastern states. Our cost of living is the lowest within mainland Australia and is very competitive internationally.

Adelaide is a '20 minute city', which means we can more easily connect and enhance our capabilities through shared projects. This proximity and interconnectivity creates an environment often seen in the world's most successful incubators and innovation centres.



**Adelaide is home to one of the largest health and medical precincts in the Southern Hemisphere, and our ambition is to continue to grow the HMI sector. Our health and life science cluster bring together capabilities in research, education and clinical care including, but not limited to:**

## Health care

- World-class, well connected and technologically advanced public teaching hospitals
- Well linked public and private hospitals
- Active NDIS and ageing well facilities and expertise.

## Expertise

- Digital health capabilities with a focus on smart technologies and clinical applications
- Drug development, generic drug manufacturing and traditional medicine
- Genomics, photonics, bioinformatics, proteomics and metabolomics
- Hi-tech simulation, virtual and augmented reality engineering and robotics
- Nanotechnology
- Highly engaged clinical trials ecosystem.

## Facilities

- Preclinical Imaging and Research Laboratories, including large animal research facilities
- Good Laboratory Practice (GLP) and Good Manufacturing Practice (GMP) facilities including clean rooms, laboratories, warehousing and cryogenic storage
- GMP-compliant radiopharmaceuticals through the cyclotron facility
- Advanced microscopy, flow cytometry, mass-spectrometry and cellular imaging
- Advanced manufacturing specialising in health and medical devices and assistive technologies
- Machine learning and artificial intelligence centres
- National clinical and population registries
- Proton beam therapy centre (under development)
- Multi-phase clinical trial facilities.

These key capabilities are housed within well connected industry and university hubs that are focused on research, development and commercialisation. These hubs are home to both international organisations and start-ups, often with state-of-the-art infrastructure.

# Economic opportunities

The South Australian Government is committed to growing the economy through industry-led initiatives. To ensure the state is on track to deliver economic benefits, the government commissioned a report to review how we engaged internationally and within Australia.

Through industry engagement, seven subsectors have been identified:

- Ageing well and the care industry
- Biotechnology
- Clinical trials
- Digital health
- Medical devices
- Nutraceuticals and traditional medicine
- Pharmaceuticals.

This Plan outlines how we can grow South Australia, both within each existing HMI subsector and through collaborative projects across the subsectors and beyond, into the other thriving state industries such as defence, space, hi-tech and food, wine and agribusiness.

Three key enablers have been identified to support HMI growth and development in South Australia:

1. Enhanced, sector-wide collaboration and whole-of-sector capability development. This will support the sharing of ideas and facilities as well as help develop a single point of contact.
2. Streamlining our clinical trials environment. This will provide growth in investment across the identified subsectors.
3. A focus on the ageing well and care industry. This is to open opportunities for investment and business growth to capitalise on federal government funding.

Additional enablers and subsectors will evolve through innovation, changes to our health systems and how consumers view health care. These emerging trends will be given consideration as growth targets, as they arise. Our industry needs to remain nimble, proactive and innovative to leverage these not yet known opportunities and the government needs to facilitate initiatives to drive cross-subsector collaborations.

The bespoke definition of the HMI sector provides a challenge when determining the current levels of growth for the sector and future Gross State Product (GSP) targets. South Australian Government broad estimates, show an average sector growth rate of below three per cent over the past eight years. These estimates do not account for all activity within the HMI sector as there are a number of gaps in the available data. An anomaly in the data is the recent information on the National Disability Insurance Scheme (NDIS) growth. The NDIS is achieving growth rates well above the three per cent target as NDIS providers establish and grow.

Summary data on the current state of the sector (excluding direct care) shows the HMI contribution to the South Australian economy as:

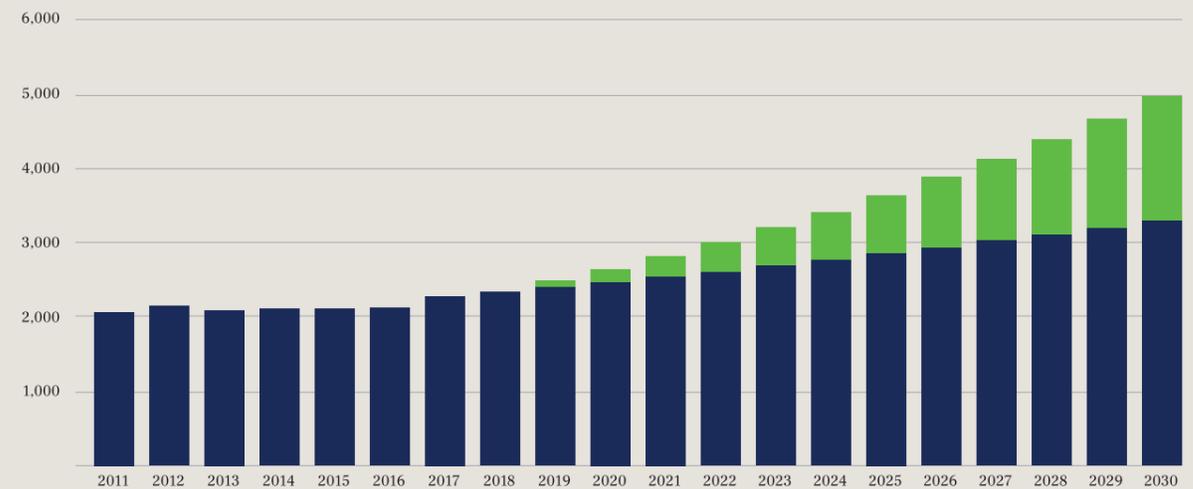
- \$4.2 billion – total expenditure (or incomes)
- \$876 million – overseas and interstate exports
- \$2.3 billion – direct contribution to GSP
- 23,789 people directly employed (or 2.1 per cent of all South Australians employed)
- \$870 million (or an additional 0.8 per cent) – indirect contribution.

Overall GSP growth over the past seven years has been at an average of 2.9 per cent per year, contributing \$2.3 billion to GSP.

The pharma, biotech, healthcare and life science sector is steadily growing and very resilient. Even major crises have had less impact on this sector compared to others.

**\$5 billion contribution to GSP in year 10, more than double the current contribution.**

**SA Health and Medical Sector  
Nominal Growth Target to 2030, \$5 billion**



Average Historical Growth (ABS/DTF) = 2.9% per annum  
 Benchmark 2018/2019 = \$2.3 billion (SE +/- 10%)  
 Growth Target 2030 at 6.5% per annum = \$5 billion

**Industry believes that the historic average growth of 2.9 per cent can be more than doubled to 6.5 per cent growth over the next ten years, based on the initiatives identified in this Plan.**

The underlying assumptions for growth include:

- Continued strong participation in the NDIS
- Increased clinical trial activity delivered through a range of initiatives
- Commissioning of the proton therapy unit
- Growth in novel fields including medicinal cannabis
- Growth in the local ecosystem, including sovereign supply and capability development
- Autonomous industry growth.

Based on the opportunities industry identified, it is expected that the doubling of the current multiyear average growth rate over the next 10 years will result in a \$5 billion contribution to GSP in year 10, more than double the current contribution. To achieve these target growth rates, the focus for engagement will be investment into South Australia (from interstate or international sources) and the development of export growth.

# COVID-19 challenges and opportunities

The HMI sector is a low transaction, high-technology sector, built on cutting-edge research and development. Testing and safety considerations give rise to a longer lead time but a consistent output of innovation. The sector is resilient, with fewer international supply chain disruptions compared to other sectors.

## Short-term industry opportunities and challenges

The HMI sector has been challenged by the COVID-19 global pandemic through:

- Decreased access to raw materials from international supply chains
- Increased freight costs, impacting product import and export
- Capital constraints, which inhibit industry from realising the economic opportunities from the pandemic
- Restricted travel, which has reduced the opportunities to export advisory services
- Increased risk of bad debt
- Decreased global exposure as international conferences are cancelled, impacting significantly on the clinical trial field.

Yet the sector is resilient and able to respond well to opportunities presented by the COVID-19 environment. These opportunities include:

- Increased clinical trial activity for companies and researchers, with South Australian companies noting an increase in business during the pandemic
- Increased demand for local health and medical products since the focus on sovereign supply. Local companies have demonstrated resilience and flexibility by filling market voids for items such as hand sanitiser and personal protective equipment
- Increased demand for products from South Australia which are considered safe and reliable. Anecdotal evidence suggests increased demand from the reopening markets.

## Long-term industry opportunities and challenges

COVID-19 will not significantly affect the long-term projections for industry. South Australia has a first-back-to-market opportunity based on the success of its response to COVID-19. New distribution networks will need to be established to optimise international market access.

Constraints on capital are likely to remain a medium to long-term concern for industry but multinational companies are seeking opportunities to grow their geographic footprint and future-proof themselves against regional disruptions. This is an opportunity for South Australia.

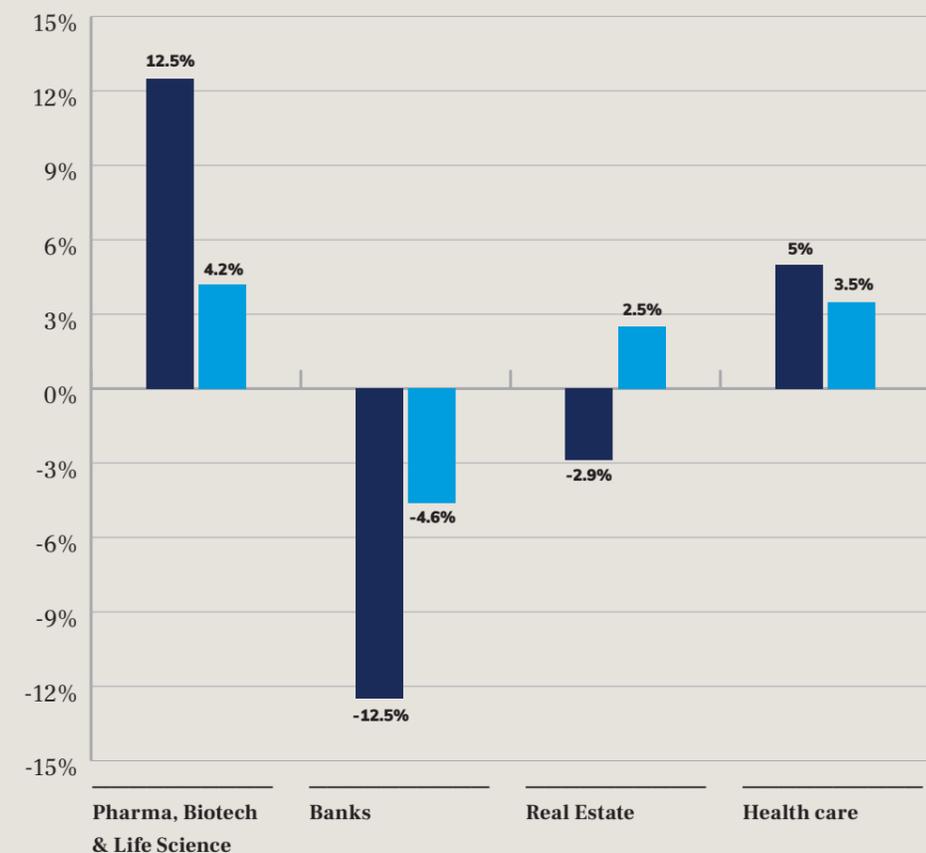
Industry growth is likely to continue with the renewed focus on sovereign medical supply capability, but this will require an active, readily-available, secure and affordable workforce. The declining global financial position will put downward pressure on wages, particularly within the low-skilled workforce, and this will help develop HMI manufacturing opportunities at an affordable level.

Industry is likely to consider global supply chain reliability more prominently in manufacture and product sourcing. While not all economists agree, it is indicated that industry may shift its approach from high quantities at lower cost to paying higher prices for a globally-recognised supply of secure products. South Australia is well positioned to take advantage of these opportunities as a stable political, economic and social state.

Personal protective equipment production is a key example, where the need for secure consistent supply has been critical during the pandemic. Local companies will be able to expand their product portfolios to capitalise on this opportunity.

It will be easier to market South Australian companies' products and services to the global market post COVID-19 as digital showcases become the standard. South Australia will need to promote a quickly recovered industry and use its hi-tech strengths to take advantage of the opportunity to engage with our global markets better than our competitors.

Sector Performance: COVID-19 vs Prior Global Crises



### Key



**Relative performance during COVID-19\***  
**Median relative performance during previous crises 1998-2018†**

\*Coronavirus (from February peak): 19 Feb, 2020-31 March, 2020

†Includes: Rising rates + slowing growth in China and Europe: Sep 2018-Dec 2018; Inflation + Fed tightening: Jan 2018-Mar 2018; China economy + plummeting oil price: Nov 2015-Feb 2016; Greece + China stock market crash: Jul 2015-Sep 2015; Concerns about Europe: May 2012-Jun 2012; Eurozone debt fears III: Oct 2011-Nov 2011; Eurozone debt fears II: May 2011-Oct 2011; Eurozone debt fears I: Apr 2010-May 2010; Global financial crisis: May 2008-Mar 2009; SARS: Nov 2002-Mar 2003; 2000 Tech crash: Mar 2000-Oct 2002; 1998 Asian crisis: Jul 1998-Aug 1998

Source: MSCI and AllianceBernstein (AB) 31 March, 2020

## Action plan to support industry

The government should support HMI by capitalising on the re-opening of markets in the post COVID-19 economy. This may include providing support (including through the South Australian Landing Pad as appropriate) to multinational companies which are seeking to invest in a new location.

The government should continue to actively link industry segments and suppliers so that products continue to flow, and support service industries to engage digitally with our international offices to bring products to market. This includes working closely with the nutraceuticals industry where there is growing global demand for safe and consistent product supply, as well as in areas such as medical technology, digital health and pharmaceuticals.

The government could help suppliers demonstrate how important it is for critical supplies, such as personal protective equipment, to be produced locally. This will support the growth of a local industry supply chain in the new business environment.

# Collaborations for growth

Opportunities for growth come from successful collaboration across industry, research/academia and government. Many such ventures are already in place, such as Adelaide BioMed City, Tonsley Innovation District and the Flinders Health Precinct.

As an emerging sector, and one with a rapidly changing profile due to technological innovations, the challenge is to build and manage a flexible innovative system that capitalises on this fast-evolving environment.

The government will focus on facilitating industry growth within the HMI subsectors and on collaborative approaches that can be developed across subsector projects for the broadest industry growth.

## Developing our networks

Our strengths in defence, space and hi-tech industries also provide opportunities for health and medical companies to expand into these fields and develop new technological applications. The government will facilitate interconnectivity and collaboration to build and develop our capability.

The significant resources available in collaboration with the agriculture industry can be harnessed to help develop pharmaceutical products and pre-clinical testing capabilities.

Our networks will include researchers, graduates and alumni and be focused on developing events that will enable these groups to continue to grow, thrive and share capabilities.

Where possible, DTI will work with the Commonwealth to unlock funding for state-based HMI initiatives and help other state departments to drive research, innovation and skills development.

The government should help link our network of international and local students with industry to ensure that graduates are interested and ready for the highly-specialised roles in the sector.

DTI will collaborate with SA Health and Commonwealth initiatives to investigate opportunities for de-identified data access and its use by companies based in the state. DTI should use international state-of-the-art examples as guiding principles to propose solutions and/or best practice.

SA Health, as a public health system provider, will continually seek to work with industry. This will include expanding the Healthy Ideas Portal.

DTI and SA Health will continue to work in partnership, promote the Industry Capability Network and the pathways for suppliers to work with SA Health, such as through the Tenders SA Website.



## Opening our doors

A cross-government coordination point, whether organised or facilitated, is essential to growing our share in the national and international clinical trials market. Industry is seeking a single point of entry into the state – and closer ties with local health facilities.

Our existing infrastructure will be opened up to support the growth of education and training opportunities in the state, and we will encourage the local universities to introduce further training in clinical practice and industry development.

We will document our capabilities and develop opportunities to collaborate locally and internationally, with the government facilitating these collaborations.

## Promoting our strengths

To capitalise on these strengths, and to ensure international promotion of our capabilities, the government will help develop an industry capability statement and continue to promote our local expertise through the international trade office network and through outbound business missions.

The promotion of clinical trials will be both local, to support increased participation rates among the local population, but also international to ensure the state can grow the number of trials being attracted and undertaken here. There is an opportunity to extend our trial capability and promote whole-of-population wellbeing and not only disease treatment.

Ageing well industry growth will be supported by developing saleable elements from implicit intellectual property and providing commercialisation support.

## Responding to disruptive ideas

The continually evolving sector presents both challenges and opportunities. South Australia has key initiatives in areas of cross collaboration including artificial intelligence, the human/neuroscience/robotic/bionic interface, defence and space medicine. Our growing hi-tech sector and existing defence and space capabilities provide unique opportunities to rapidly develop the HMI sector in partnership with these sectors.

South Australia will be an agile and flexible state, ready to consider new ideas, and ready to support companies establishing here to develop and commercialise their ideas.

An aerial photograph of a city, likely Adelaide, South Australia, featuring a large hospital complex with a prominent circular building and a stadium in the foreground. The image is overlaid with a green vertical bar on the left and a yellow text box on the right.

# Health and Medical Industry (HMI) subsectors

The HMI sector in South Australia has been largely undefined, and opportunities have emerged in various fields with significant growth potential.

To support a focused development for the sector, the industry engagement process identified seven subsectors where South Australia has a comparative advantage and from which the majority of the sector's growth will be derived.

The first enablers identified will have broad impacts across the subsectors, and through the development of the subsectors, new opportunities will follow, including opportunities to market our expertise for cross border care and enhance our research standing.

These seven subsectors, their respective challenges and opportunities are outlined in the following section.

# Ageing well and care industry

**B**usinesses within the ageing well and care industry work to improve and maintain quality of life for people throughout their life stages through research and development as well as delivering products and services. This subsector incorporates preventative health care and positive ageing through to aged care and disability support services. The broader care sector and objectives for 'living well' encompass people of all ages, including opportunities presented through NDIS.

Ageing well is a growth business globally, with rising incomes and ageing populations combining to increase demand for ageing well services. The World Health Organisation (WHO) has declared 2020-2030 the decade of healthy ageing and this provides a mandate and framework of priorities and opportunities for healthy ageing that focus on optimal functioning, rather than simply the absence of disease.

South Australia has the second-highest proportion of individuals over the age of 65 in the nation and the highest proportion of people over the age of 85. This comparative advantage opens opportunities for South Australian businesses to export ageing well services and to attract inbound investment into local businesses.

A cohesive care sector will support the development of an international profile as the living well state, where people contribute to our thriving community throughout their lives.



## The challenges

The context for aged care and the NDIS in Australia is challenging for industry because of the regulatory impact on business sustainability, expectation of the quality of care and limited ability to leverage strengths to invest in innovation and new markets.

Workforce shortages and the need to attract, develop and retain a culturally and linguistically diverse workforce are also key challenges.

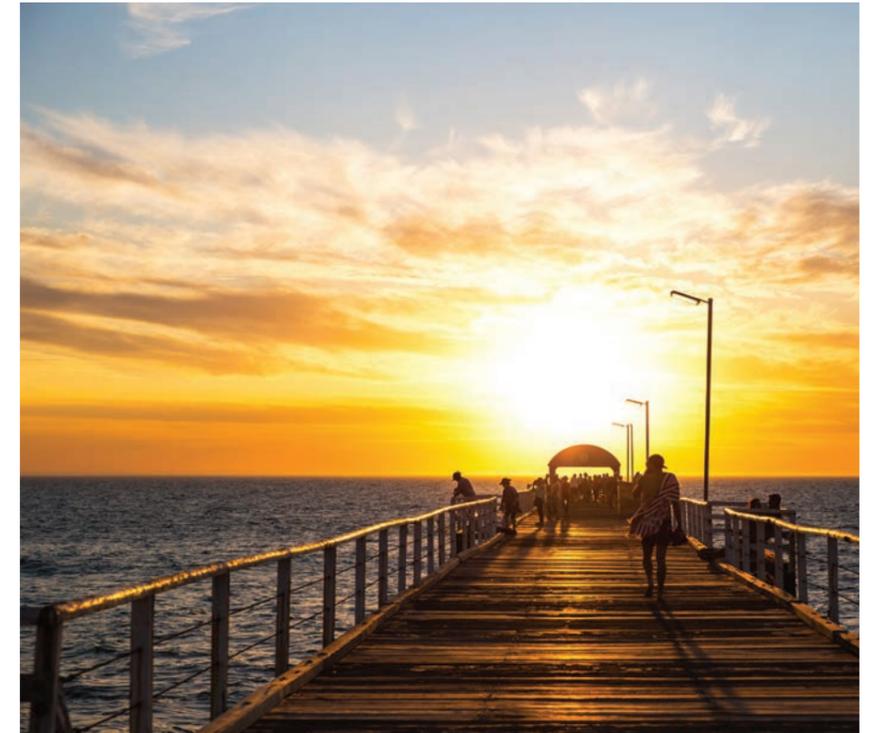
## Achievements to date

Over 250 members in industry peer to peer network Ageing Well International (AWI) industry, government and academia have worked together to identify challenges and opportunities for the health, living well and disability sectors.

The government has minimised barriers to growth by supporting business transition reforms, including access to grants; facilitating collaboration and co-design; and delivering strategies for workforce development, particularly in the outer metropolitan and regional areas.

South Australian universities hold outstanding expertise in investigating and implementing innovative ways of delivering best practice in the chronic condition space by galvanising clinician-scientists, consumer groups and health service reforms.

Wellbeing SA was created as a new government agency in January 2020. It is attached to SA Health and will support the growth and development of wellbeing in South Australia.



The Registry of Senior Australians (ROSA) was established in 2017 through a partnership of researchers, clinicians, aged care providers and consumer advocacy groups. ROSA supports the monitoring of the health of people receiving aged care, including the use of services and medication.

Industry initiated 'Ageing Well International', a business network which facilitates capability development for investment and export. Ageing Well International also supports businesses in the ageing well and care sector that are export market ready and/or have export potential.



**SA - home to the Registry of Senior Australians**

## What success looks like

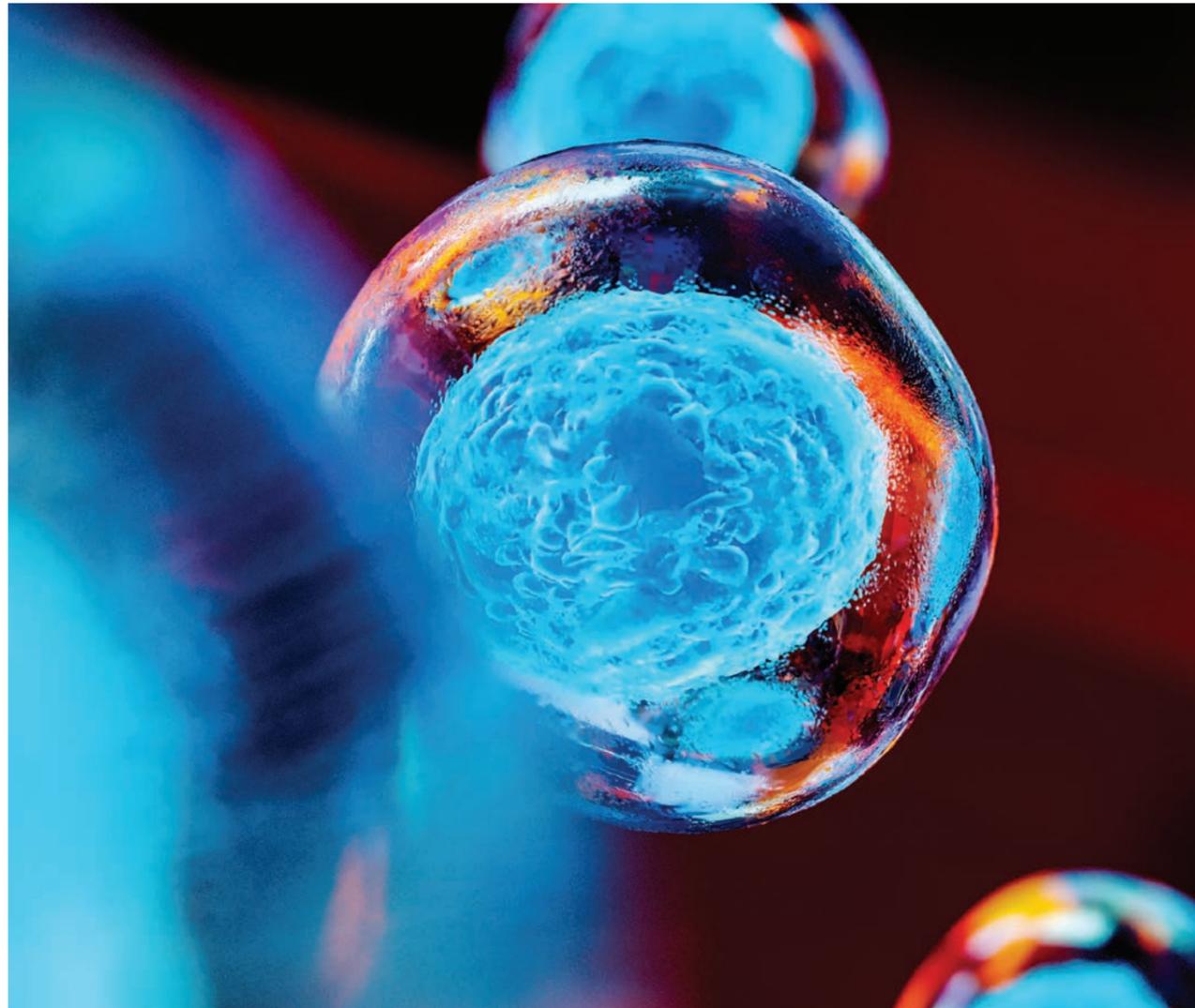
South Australia will be known as the 'living well capital of Australia', with increased overseas investment in living well businesses, increased leadership in preventative health care, growth in research and development, and more NDIS-ready companies.

Industry and government will continue to work together to resolve the workforce challenges and ensure that the industry is sustainable in the long-term.

ROSA will be used by researchers and industry to develop and commercialise services and technologies.

Exports will grow in the living well sector, demonstrating the state's capacity and capability in the market. Growth will come through industry-led initiatives such as Ageing Well International, through new markets and increased revenue opportunities, and through the realisation of local and international education and training opportunities.

The government will facilitate and support living well industry innovations to commercialise and export products and services and through clinical trials activity in the sector.



# Biotechnology

**B**iotechnology harnesses cellular and biomolecular processes to develop technologies and products that improve our lives and our health. South Australian companies in this subsector are usually small to medium organisations with an emphasis on research and development activities.

## The challenges

South Australia's biotechnology industry led the nation, but growth has slowed in recent years.

There are workforce shortages because local graduates are moving interstate. This is due to the limited number of opportunities for students to engage with industry within the state.

## Achievements to date

More than 80 new biotechnology companies have been established since 2001, with jobs in South Australia's biotechnology sector doubling to around 1700.

Local companies continue to develop collaborations with major players in the pharmaceutical industry, with a successful focus on developing CAR-T cell therapies, growing the state's potential to be a regional leader in the field.

South Australian companies can link up with the world-renowned Texas Medical Center (TMC) through our North American office located in Houston, Texas, and may be eligible to apply for the TMC accelerator program (TMCx).

**80**  
new biotech companies  
established

Further Good Manufacturing Practice (GMP) expertise, training and skills development need to be considered to support growth.

The local industry is not cohesive and there are limited prospects for co-location which would support collaboration. The sector would benefit from an independent entity to facilitate investments and a cohesive approach to growth.

## What success will look like

There will be increased collaboration between university researchers, industry and funding partners, with more spin-out companies and licensing deals.

An independent bioscience coordination point, connected through the proposed industry connectivity initiative, will be established to promote goodwill within the sector. This will enable efficient communication and camaraderie across competitive entities.

A reinvigorated clinical trial environment in South Australia will support critical biotechnology research and development.

Artificial intelligence growth opportunities will be developed in collaboration with the hi-tech sector, and test biotechnologies that support economic growth outcomes.

Opportunities will be developed for GMP facilities, supported by training programs to help drive the biotechnology industry and encourage investment and export growth.

**AI and biotech opportunities to support economic growth**

This industry is defined by its research and development expertise. There needs to be support for research growth and commercialisation opportunities for emerging technologies.



**Industry Connectivity Initiative will support bioscience coordination**

The ageing well space will provide opportunities for wellness applications to be tested.

A university-industry student placement program will be considered so that students have the opportunity to better understand the biotechnology industry and test ideas. This will also promote industry-ready graduates.

# Clinical trials

**A** clinical trial is any research study involving patient or non-patient human volunteers to test new treatments, interventions or diagnostic approaches to prevent, detect, treat or manage various diseases or medical conditions. Clinical trials provide an opportunity for research and business growth, seeing South Australia at the forefront of medical research and patient care in niche clinical areas. Clinical trials are undertaken across the breadth of the HMI sector.



**South Australian clinical trial portal launched March 2020**

## The challenges

South Australia has a low participation rate in clinical trials, despite having a high rate of trial patient retention and a population that is relatively stable.

Austrade's Clinical Trials Capability Report states that in 2015 clinical trials were worth an estimated \$1.1 billion in direct expenditure. South Australia's market share in this is low.

There are a number of clinical trial service providers in the state – both public and private, clinician-led and industry-driven. However, there has been no single clear entry point for information on clinical trial capability and capacity in South Australia, which limits our capacity to attract new clinical trials. Initiatives are already underway to create a single point of information for current trials, our capability, and our capacity. It will be important to monitor their progress and make sure that they meet the needs of clinicians, researchers, industry and potential study participants.

Clinical trials are not streamlined and consideration needs to be given to factors such as governance, patient cohort accessibility, time from initiation to completion, the availability of clinical research coordinators, and approach to intellectual property to enhance growth.



**Clinical trials – connecting research with companies, volunteers and patients**

## Achievements to date

SA Health has developed a web portal ([www.sahealth.sa.gov.au/clinicaltrials](http://www.sahealth.sa.gov.au/clinicaltrials)) which will act as a landing page for parties interested in learning more about clinical trials in South Australia. The site includes specific information on the expertise and capability to support clinical trials within SA Health and the private sector.

SA Health has begun implementing the recommendations of the Birch Report (2018), with some activities beginning prior to its release. Health Translation SA, in partnership with SAHMRI, has established a Clinical Research Governance Steering Committee, which will help speed up this process in partnership with SA Health and the Local Health Networks (LHNs).

SA Health is procuring a new research management system, with an emphasis on improved data capture and reporting capabilities, to streamline the collection of public health sector data.

New clinical trial management software solutions are also being rolled out at various LHNs.

## What success looks like

Our clinical trial processes will be streamlined, with faster and more consistent processes for ethics and governance approvals. An attractive and easier to navigate system will increase interest in clinical trials within South Australia and increase opportunities for private clinical trial service providers.

South Australia will have a state-of-the-art, innovative and fit-for-purpose single point of entry for clinical trials. The first deliverable, the web portal, connects trial sponsors with lead investigators and will attract more international studies to South Australia.

An increased focus will be on areas such as vaccines, oncology, immunology and human genomics, where South Australia has recognised research capability. Clinical trials to support quality of life and lifestyle interventions will also be focal points and align with the state's ageing well strengths.

Capitalising on Federal Government initiatives, South Australia will embrace the opportunity to expand clinical trial work to include remote and rural primary care providers and private practices. Participation in target populations, such as older Australians and NDIS recipients will be encouraged through the industry connectivity initiative.

Education and training in South Australia will be enhanced, with Good Clinical Practice training made available to local clinicians and nursing staff. This focused training will grow the local talent pool of principal investigators and clinical research coordinators. University medical programs will introduce clinical trial subjects to support early training and develop a deeper pool of clinical research talent.

South Australia will continue to be marketed as a place for clinical trial investment through DTT's network of international offices and by capitalising on international business missions.



# Digital health

**D**igital health is an electronic means of treating and delivering preventative and diagnostic healthcare. It provides a customer centric service by using data, information and technologies to deliver a more precise and personalised healthcare experience. Digital health uses both hardware and software, and incorporates telemedicine, secure messaging, smart phones, wearable devices and other technological aids that help medical professionals and their patients manage their health and wellbeing.

## The challenges

The healthcare system is complex, involving a cross-over between public and private providers within a highly regulated and risk averse system. This limits the uptake of new technologies. We need to become a hub for inbound digital health research and development to overcome this challenge and capture this significant investment opportunity.

There needs to be greater collaboration between industry and frontline healthcare providers to capitalise on the growth of digital health. Improved collaboration and understanding of healthcare needs will lead to new products and services that will deliver tangible digital health outcomes with a direct channel to market.

**South Australia is home to digital health solutions ready to grow**

## Achievements to date

Australia is considered one of the leaders in health and medical research, with early adopters of new technologies. All levels of government have invested significantly in developing the core components of health tech infrastructure.

Growth of the digital health sector in South Australia is evident in the cluster of local companies, the research hubs at local universities, and the complementary initiatives like GigCity and 10 Gigabit Adelaide.

## What success looks like

South Australia will attract investment groups with expertise in digital health companies and start-ups through active promotion of our expertise. The growing digital health sector will be an essential part of providing health care and will attract more grant funding.

The supportive trials environment being developed will lead to increased digital health trial activity, coinciding with established initiatives within the major regional medical hubs.

South Australia's care sector will encourage the development of digital health solutions and collaborations across industry to support sector growth and improve customer outcomes.

South Australia will continue to capitalise on state-of-the-art health and medical research, with scientific and academic institutions pursuing innovations in technology, such as artificial intelligence, and providing opportunities through data linkages.



**Improving care outcomes through technology**

Opportunities in digital health will result in increased cross-border care, as South Australia takes its medical solutions global through digital platforms.

New electronic patient data policies will be developed so that companies can better access deidentified data and develop solutions for local, national and global healthcare challenges.

**Developing solutions locally to address global challenges**

# Medical devices

**M**edical technology includes a wide range of medical devices (including in vitro diagnostics) used to diagnose, monitor or treat diseases in a home setting, at hospital or through health providers. In Australia, most businesses are based around medical and surgical equipment manufacturing.



## The challenges

The medical devices industry consists broadly of small and medium-sized enterprises – almost half of Australian medical device companies employ less than 20 people. Larger firms usually facilitate global market entry and we need international connections to support the ongoing development of supply chain opportunities.

There is a shortage of specialist skills and a lack of subsector specific management skills.



**\$1.5 million**  
provided for Medical Device Partnering Program (MDPP)

## Achievements to date

South Australia has a reputation as a centre of excellence and innovation, based on its continuous delivery of medical technology innovations.

The government has helped local medical device companies enter global markets through its international trade offices and outbound business missions.

In October 2018, the government announced \$1.5 million funding for the Medical Device Partnering Program (MDPP), to boost the state's medical technology sector and encourage greater collaboration between industry and research. This initiative has been a major success and MDPP is now expanding nationally.

## What success looks like

MDPP will support more projects, creating medical technology start-ups and knowledge-based employment opportunities in South Australia.

Dedicated facilities and funding will be developed to help commercialise the intellectual property of local research.

South Australia's evolving supply chain infrastructure will provide international medical technology companies with a unique opportunity to expand their manufacturing footprint in the fast growing and increasingly important Asia Pacific region.

The state will be a strong contributor in areas including personalised implants, bionics, and smart devices, and develop solutions to fully utilise the captured data and expand export opportunities.

The government will support initiatives that defragment the industry and develop opportunities for collaboration and capability development, resulting in increased investment into South Australia.

Medical device testing will be a focus through the enhanced clinical trial environment, with specialist opportunities in the care sector.



# Nutraceuticals and Traditional Medicine

**N**utraceuticals are nutrient-fortified or bioactive functional food and dietary supplements which may provide medicinal or health benefits, including disease prevention and treatment.

Traditional medicine is characterised by the production of herbs and other natural materials considered to have therapeutic effects, using traditional techniques established thousands of years ago. This includes traditional techniques and knowledge from Aboriginal and Torres Strait Islander peoples and cultures as well as from international cultures.

## The challenges

Historically, South Australia has not been as competitive as our interstate counterparts in the nutraceutical and traditional medicine industry. There is anecdotal evidence of some South Australian companies experiencing major success, but broader market opportunities suggest that industry initiatives could achieve more growth.

Whilst the state boasts research excellence in traditional medicine, there has been limited commercialisation and business growth within the state.

6

**globally connected research centres call South Australia home**

## Achievements to date

South Australia is home to a significant number of traditional medicine research institutes, with universities as major partners. Research includes the application of traditional knowledge to source active compounds from native plants and fast tracking these into commercial products.

Our universities have strong ties to traditional medicine research within Asia, particularly China. These networks promote common research interests and the use of Australia's biological resources to develop environmentally and ecologically friendly products and services.

## What success looks like

Australian health products carry a strong global reputation with consumers as premium quality, clean, green and safe due to our standards and comprehensive regulatory environment. These qualities will be promoted to support global market entry for local products.

Nutraceuticals are growing in popularity as consumers look to alternative products to enhance their health and wellbeing. While not discounting other countries, the initial focus will be on countries with a strong traditional medicine culture and high complementary medicine uptake such as China, South Korea and India.

Universities will continue to develop traditional medicine research and seek opportunities to commercialise products. A strengthened clinical trial market will help develop the evidence base.



**Leveraging the \$1 billion export market**

To succeed in this burgeoning market, South Australia will leverage the \$1 billion export of in-demand, high quality, Australian complementary medicines. Asia is the fastest growing region of the world, with a developing middle class and ageing population that will further demand Australian health and medical products.

The 'Made in Australia' brand, capitalising on our quality and pristine environment, has the potential to grow markets across the Asia Pacific region.

DTI's international offices will help develop reciprocal opportunities with exporters and consumers of nutraceuticals as well as explore commercial opportunities.

South Australia will further develop industry connections and collaboration between Aboriginal and Torres Strait Islander communities and commercial enterprise groups. This will help the sector to carve out a niche nutraceuticals market underpinned by native bush flora.

**Local resources will support global opportunities**

# Pharmaceuticals

The pharmaceuticals industry involves the discovery, research, development, regulation and commercialisation of human medicines, including all cellular therapies and regenerative medicine. It also includes the cultivation of medicinal cannabis and the manufacture of medicinal cannabis products for export markets. It is a multi-billion-dollar industry dominated by large multinational corporations.



## The challenges

Australia represents a small market with approximately one per cent of global pharmaceutical and medical technology sales. However, it is well placed to capitalise on the rapid growth of its densely populated neighbours.

Medicinal cannabis market development is being hindered by a lack of Australian clinical peer-reviewed evidence to promote the efficacy of medicinal cannabis to treat a range of conditions. Medical professionals are unable to engage with formal training in medicinal cannabis, and there are few guidelines to support product supply or dosages required for treatment.

South Australia has recognised expertise in a wide range of areas including vaccines, oncology, immunology and endocrinology, and there is an opportunity to better match pharmaceutical investment to these specialist areas.

## Achievements to date

Pharmaceutical manufacturers in South Australia have been able to expand their facilities and grow the local industry through Commonwealth and state government investment over the last ten years.

At least three companies are focusing on producing medical-grade cannabis end-products in South Australia with an export focus.

South Australia is engaging in medicinal cannabis clinical trials for specific disease states.

## What success looks like

The clinical trials environment will support research and development and in particular explore the evidence base for medicinal cannabis.

GMP training courses will be offered and bring people to the state to study.

Partnership pathways will be developed with a focus on clinical trials, procurement, and research collaborations. The development of more GMP compliant infrastructure will lead to our companies becoming contract manufacturers for medium to large companies.

Local expertise in a variety of other medical disciplines will be harnessed to create opportunities for pharmacological research and commercialisation.

Opportunities to establish high-value pharmaceutical operations, either for development and manufacture of originator products or for contract development and manufacturing services will be promoted to global companies.



Our oncology expertise, together with our GMP-compliant infrastructure, will attract at least one major pharma company to invest in production capability in South Australia.

The government will create an environment that better supports local manufacturers in international outreach, including outreach in developing economies which represent significant pharmaceutical export markets.

Venture capital, or other investments in pharmacology, will grow in South Australia.



**Growing GMP Infrastructure**

# Next Steps

## – Respond, deliver, grow

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**T**o enable the anticipated growth through this Sector Plan, DTI will work with industry leaders through the HMI MAP to develop annual operational plans.

The focus for each operational plan will be to respond to new challenges, deliver outcomes and grow the HMI Sector.

The focus for the first year will be to:

- respond to the challenges identified for each of the subsectors
- respond to the challenges identified through COVID-19, supporting growth in supply chains for critical supplies such as personal protective equipment and streamline access to clinical trials to support research and vaccine development
- deliver the industry connectivity initiative
- deliver a streamlined clinical trials interface
- grow the ageing well opportunities through business development activities
- grow industry in emerging sectors such as medicinal cannabis through the network of international offices; and
- develop measures for success and growth.

The operational plan will feed into the annual review of the Sector Plan to ensure the sector remains nimble and responsive.

To keep up to date on the progress, go to [dti.sa.gov.au](http://dti.sa.gov.au) or follow DTI on social media.



## Department for Trade and Investment

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