



Working paper #2: The future opportunity in the health innovation and care economy

Eastern Region Health Innovation and Care Economy Project

Victorian Government and Eastern Region Group of Councils, prepared by SGS Economics & Planning

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Executive summary

Introduction

The project is a region-wide research and engagement project to develop a strategy to advance regional priorities and inform government on developing a health innovation and care (HI&C) economy in the Eastern Region of Metropolitan Melbourne.

This working paper is the second in a series of five. This working paper seeks an understanding of the trends that will impact the development of a health innovation and care economy into the future locally, across Melbourne and nationally.

The working papers provide background material that will be developed further through stakeholder engagement.

Working paper findings

The significant findings from the paper are outlined below.

Health care spending is booming in Australia

The health care sector is one of Australia's fastest-growing, growing at double the pace of Australia's GDP. The Commonwealth and Victorian State Governments are also making record-breaking investments in health infrastructure. Meanwhile, the medical product manufacturing sector grew at eight per cent per annum between 2018 and 2023, a high growth rate.

This expenditure and investment has led to rapid growth in employment in hospital and health services in the Eastern Region, with employment in these sub-industries growing at 5.8 and 4.3 per cent respectively between 2016 and 2021. The employment growth rate for hospitals in the region has been faster than Australia and Greater Melbourne. Employment in medical product manufacturing has experienced lower levels of growth in the Eastern Region, growing at 2.1 per cent per annum since 2016, which is lower than in Greater Melbourne (4.5%) and Australia (3.6%). Future growth prospects are very strong

With an ageing population, new technology innovations and investments post-pandemic, the health care sector can only continue growing. Based on past spending patterns, growth will stem from the increasing demand for health services and the funding of new technologies. Over the medium term, the combined effect is substantial growth across all major health spending and employment categories, including hospitals, medical services, research and medical product manufacturing. In addition, the Commonwealth and Victorian State Governments will continue to have record-breaking investment pipelines in health infrastructure.

Trends in health care will lead to growth in the HI&C economy and drive innovation

The HI&C economy will see changes and developments in the coming years as technological advances, knowledge and research, quality of life improvements, demographic change and globalisation impact the HI&C economy.

Trends in the HI&C economy include:

- **Technological development** will potentially be the most significant source of growth and innovation as current technologies are improved, and entirely new technologies are developed. This technological change extends to artificial intelligence, 3D printing and advanced manufacturing processes, new forms of treatment and innovative medical products.
- Like many developed economies, Australia is experiencing a significant **demographic shift** towards an aging population. This shift will profoundly impact the health care industry in several ways, including increased demand for services and medical products and a greater need for specialised services for the elderly. The increased demand will likely cause issues, including more expensive health care costs for government, hospital capacity constraints, and worker shortages.
- How health care is delivered will change in response to issues, trends, and innovation. Two changes are the increase in **telehealth services** (a shift expedited by the COVID-19 pandemic) and a shift to more **at-home care** to make patients more comfortable, account for changing demands and ease hospital demand.
- A focus from the Australian Government on improving Australia's ability to **commercialise research** will support the research and medical product manufacturing sub-sectors. The commercialisation of research refers to translating scientific discoveries and technological innovations into commercially viable products, processes or services that can be brought to market. Australia, at least compared to the USA, has a middling reputation in commercialisation, but that is improving.
- The reshoring of manufacturing for essential goods (like health products) became a focus during the COVID-19 pandemic that will continue to prevail in coming years.

Metropolitan-level trends and policy supports the growth of the HI&C economy in the Eastern Region

Melbourne's economy has undergone significant structural change over the last 30 years. The former manufacturing-based economy has transformed into a diversified post-industrial economy driven by knowledge-intensive services to drive economic output and innovation. This shift supports the ongoing growth of the HI&C economy. Health and education precincts across Melbourne are predicted to see some of the highest growth in job numbers and development over the next 20 years.

Other trends in planning and economics include circular economy, advanced manufacturing, adapting to climate change and capturing more wealth locally.

There are many opportunities for the HI&C economy in the Eastern Region

The research for this paper has started a list of opportunities for the Eastern Region and its HI&C economy that will be built on through engagement. These include:

- The Eastern Region can capture an outsized share of the state and federal governments' health expenditure and capital investments to grow the HI&C economy in the region.

- The region can also capture a more significant share of money already being injected into the region by developing collaborative partnerships and dense local supply chains.
- Taking advantage of rapidly developing changes in service provision and moving quickly to develop advantages — examples include leading the nation in developing an at-home care sector.
- Leverage advanced manufacturing and regional specialisations to lead in the advanced manufacture of medical products. Advanced manufacturing has been heavily promoted by state and federal governments and is supported through attempts to re-shore some of Australia’s manufacturing capabilities. The Region already has manufacturing assets and a demonstrated focus on R&D and innovation to take a leading role.
- Utilise the region’s research and clinical trial assets to lead in the commercialisation of research, an area of focus for government and industry.
- The continued success of clinical trials through the Monash Health Translation Precinct.
- Lead the transition towards a circular economy in the health sector. The scale of the Region in terms of size, industry diversity and mass creates an opportunity to develop a circular economy in the HI&C economy. The health care and manufacturing industries are heavily material-dependent and waste-producing. This creates an opportunity to explore the circular economy and work with businesses to embed localised supply chains by aligning upstream and downstream businesses – such as medical device and equipment manufacturers and commercial recycling and waste recovery businesses. This traps money and resources locally while being much better for the environment and resource use.
- Increase the Eastern Region's ability to support existing major health clusters in elsewhere Melbourne (like Parkville) that depends on the Eastern Region’s strengths in the HI&CE.

1. Introduction

1.1 Introduction to the project

The project is a region-wide research and engagement project to develop a strategy to advance regional priorities and inform advice to government.

This project seeks to understand the regional strengths and opportunities relevant to health and the role of the health economy in regional recovery and growth.

The project aims to position the Region as a leader and to support future growth in health care and innovation for regional economic benefit through:

- Leveraging existing regional strengths (world-class health precincts, R&D capacity)
- Capitalising on current government investment and projected future growth and innovation (e.g. MedTech; active and future medical / health precincts; clinical trials)
- Futureproofing against regional vulnerabilities and health challenges (e.g. fastest ageing metropolitan Region; COVID-19 recovery; key worker housing)
- Addressing current and projected workforce and skills shortages (nursing, aged care, disability care; highly-skilled innovative professionals and entrepreneurs)

The project's first stage will produce a series of five working papers to act as a resource to inform a co-design phase in 2023. The co-design phase will identify how regional stakeholders will respond to the opportunities and challenges presented.

1.2 Introduction to the paper

This working paper seeks an understanding of the trends that will impact the development of a health innovation and care economy into the future locally, across Melbourne and nationally.

This paper contains five chapters:

1. Introduction
2. Industry forecasts
3. Health innovation and care trends
4. Economic development and planning trends
5. Summary of findings

1.3 Other papers in the series

This working paper is the second in the series. The other papers are:

- **Working paper #1: the region's health innovation and care ecosystem:** This first paper defines the health innovation and care economy and maps its current ecosystem in the Eastern Region across

four sub-sectors (hospitals, health services, health product manufacturing and health research). The sector's economic value, in terms of gross regional product, export value, flow-on impact, innovation and employment, has also been estimated, as well as assets, strengths, and weaknesses.

- **Working paper #3: developing a best-practice health care economy:** This paper aims to understand how best-practice health innovation and care industry development is being done elsewhere and the lessons relevant to the Eastern Region.
- **Working paper #4: best-practice innovation:** This paper aims to understand the role of innovation in economic development. The focus is on understanding how innovation happens in places and creates new businesses, products or services and what government can do to support it.
- **Working paper #5: community wealth building (CWB) diagnostic:** This paper explores industry development outcomes. Though health care spending is booming, it's essential to consider where that money is going and whether it creates local wealth, local business opportunities and great jobs for residents.

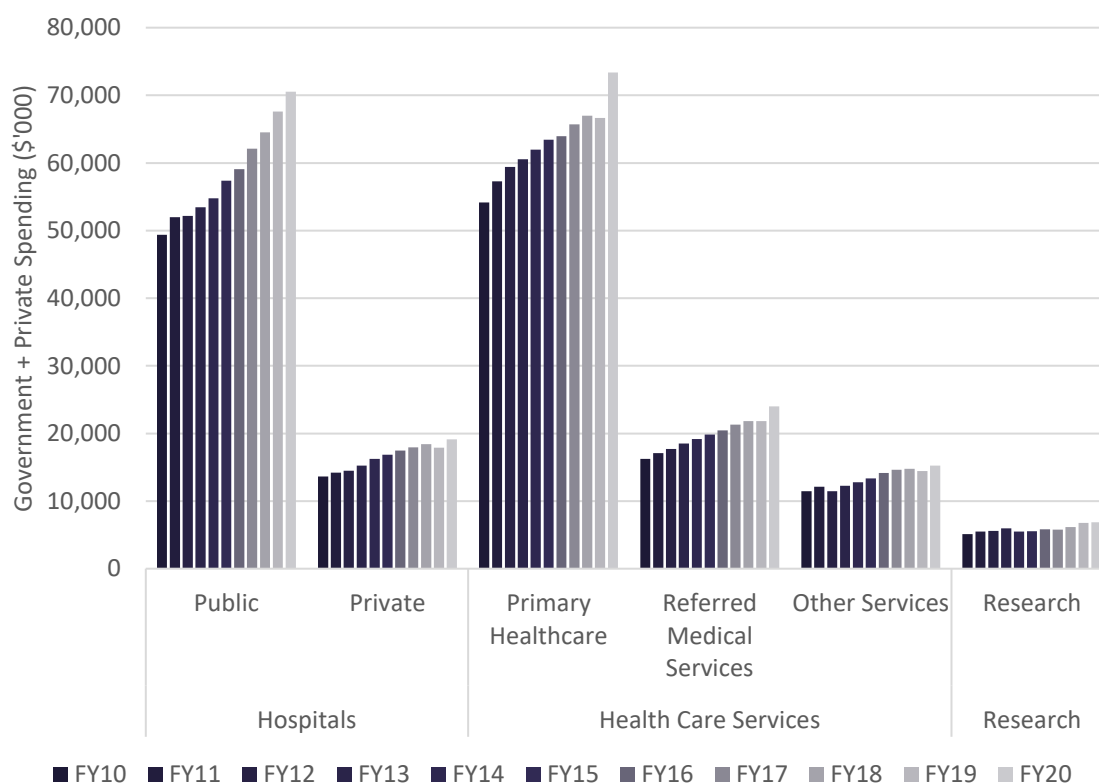
2. Industry forecast

2.1 Health expenditure in Australia

The health care sector is one of Australia’s fastest-growing sectors, growing at double the pace of Australia’s GDP. Both the Commonwealth and Victorian State Governments are making record-breaking investments in health infrastructure, while the funding for government programs like aged support and the National Disability Insurance Scheme (NDIS) continues to increase year-on-year.

Figure 1 below shows the government and private spending on health care since 2010. It shows an increase in expenditure across hospitals, health care services and research, with a spike in 2019/20 as the COVID-19 pandemic began. Between 2010 total government and private spending on health care increased by 3.4 per cent per annum.

FIGURE 1: TOTAL INVESTMENT BY HEALTH CARE SECTOR



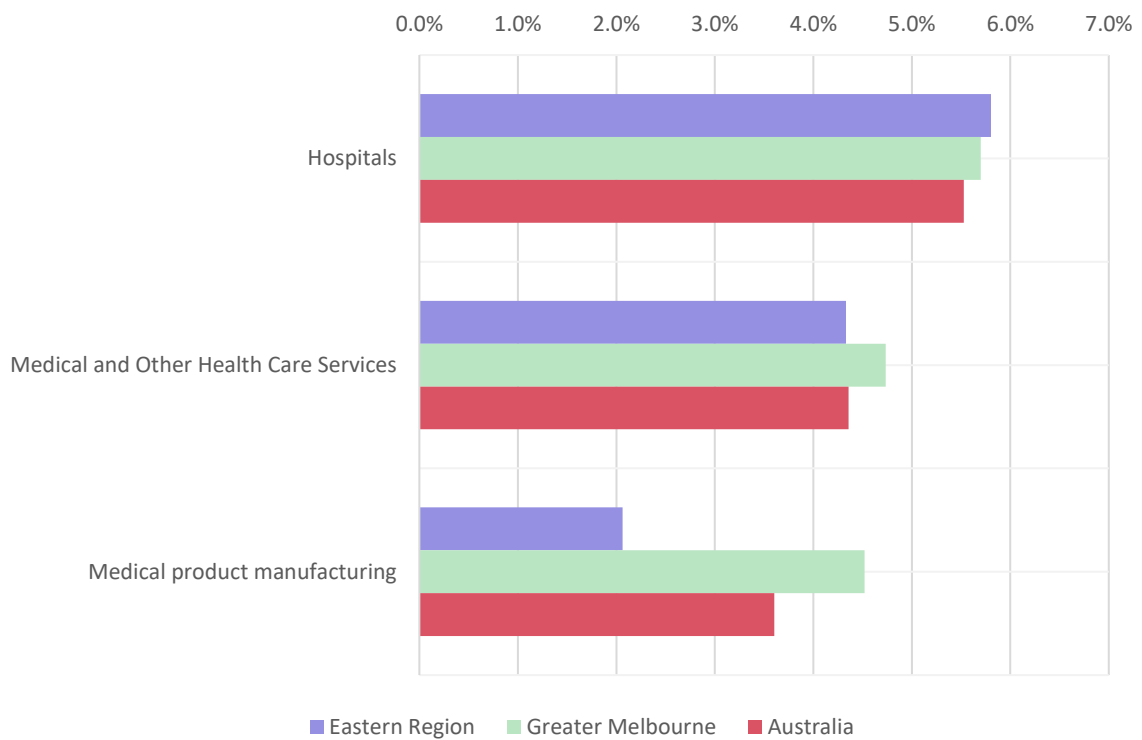
Source: Health care Expense Report, AIHW, 2021

Unlike health services, hospitals and research, manufacturing is almost entirely privately funded. Indirectly, these private organisations receive government funding by selling their products to other health care providers, but this is more volatile than direct payment from the government. Many Australian medical product manufacturers generate capital through public listing on the ASX. In 2022 though, the Victorian government began taking steps to involve manufacturing in the process of

government funding through the “Medtech Manufacturing Capability Program”.¹ The total funding of this has been \$3.2 million so far, which is minor on the scale of health care funding, but shows signs of increasing in the future. The federal government has also stated an intention to spend \$1.5 billion in the medical manufacturing industry.²

The expenditure and investments made have led to rapidly increasing employment in hospitals, health services and medical product manufacturing (Figure 2). The Eastern Region has seen employment in hospitals grow by 5.8 per cent between 2016 and 2021, faster than the rate across Greater Melbourne and Australia. Medical product manufacturing employment in the Eastern Region has grown by 2.1 per cent per annum, a rate that is slower than the rest of Melbourne and Australia more broadly.

FIGURE 2: ANNUAL AVERAGE GROWTH RATES IN EMPLOYMENT FROM 2016 TO 2021 BY REGION



Source: SGS Economics and Planning, based on ABS census, 2021 and 2016

Overall, with an ageing population, new technology innovations and investments post-pandemic, the health care sector can only continue growing. Based on past spending patterns, growth will stem from the increasing demand for health services and the funding of new technologies. Over the medium term, the combined effect is substantial growth across all major health spending and employment categories, including hospitals, medical benefits, pharmaceuticals, and private health insurance. In addition, both the Commonwealth and Victorian State Governments are making record-breaking investments in

¹ <https://business.vic.gov.au/grants-and-programs/medtech-manufacturing-capability-program#:~:text=The%20program%20will%20provide%20eligible,1%20cash%20co%2Dcontribution%20basis>
² <https://www.industryupdate.com.au/article/labor-pledges-35-billion-medical-and-advanced-manufacturing>

health infrastructure, and the funding for government programs like aged support and the National Disability Insurance Scheme (NDIS) continues to increase year-on-year.

2.2 Industry forecast indicators

This section contains sub-sector forecasts for the HI&C economy, as drawn from IBISWorld Industry Reports and other sources. Indicators such as growth in revenue, the number of businesses and employment in Australia are captured in the table below.

FIGURE 3: INDUSTRY INDICATORS OF PERFORMANCE IN AUSTRALIA

Indicator	Hospitals and health service	Medical product manufacturing	Scientific research	Biotechnology*
Annual revenue	\$198 billion	\$7 billion	\$9 billion	\$10 billion
Annual growth (2018-2023)	2.2%	8.2%	3.0%	4.0%
Annual growth (2018-2023)	3.0%	2.2%	2.3%	3.4%
Profit margin (2022)	10.9%	11.0%	2.6%	-0.9%
Number of businesses (2022)	144,000	1,800	5,300	865
Employment (2022)	1,000,000	12,800	34,500	22,366
Average wage (2022)	\$99,200	\$91,500	\$101,300	\$131,000

Source: IbisWorld Industry Reports: Health Services in Australia, Medical and Surgical Equipment Manufacturing in Australia, Biotechnology in Australia, Scientific Research Services in Australia. *Biotechnology involves applying science and technology to living organisms, and parts, products and models, to alter living or non-living materials to produce knowledge and biotechnology products and services.

The indicators point to the strong growth rates in the HI&C economy nationally, with high-profit margins, thousands of businesses and high average wages.

The next table captures the key external drivers and key trends that will impact the HI&C economy. These and other trends will then be explored in more detail in the remainder of the report.

FIGURE 4: INDUSTRY DRIVERS AND TRENDS

Indicator	Hospitals and health service	Medical product manufacturing	Medical research & biotechnology
Outlook	The Health Services subdivision is forecast to continue growing over the next five years, due to Australia's ageing population, the increasing prevalence of many chronic diseases and rising private health insurance coverage.	The Medical and Surgical Equipment Manufacturing industry is projected to continue growing over the next five years due to an ageing population, strong demand from hospitals	The Biotechnology industry is forecast to grow over the next five years, driven by increased demand for, and greater acceptance of, biotech products. Revenue for the Scientific

		and increased government funding to health care services.	Research Services industry is projected to grow at a stable rate.
Drivers of growth	<ul style="list-style-type: none"> - Population aged 50 and older - Private health insurance membership - Real household disposable income - Federal funding for Medicare - Government funding for public hospitals 	<ul style="list-style-type: none"> - Population aged 50 and older - Public health expenditure - Demand from public general hospitals - Demand from private general hospitals 	<ul style="list-style-type: none"> - Total health expenditure - Capital expenditure by the government - Capital expenditure by the private sector - Population aged 70 and older - Private research and development expenditure
Key trends	<ul style="list-style-type: none"> - Hospitals have maintained capacity while increasing throughput rates - Increased patient volumes for GPs and specialist medical practitioners - Revenue growth is forecast to outpace employment growth due to improving efficiency and technology - Australia's ageing population is projected to drive growth over the next five years - Medicare will be one of the fastest growing aspects of government expenditure in coming decades - Australia's growing and ageing population has strengthened demand for health services 	<ul style="list-style-type: none"> - Increased spending on industry products due to the pandemic - Strong demand for medical and surgical equipment - Growing demand has enabled firms to command higher prices, boosting industry profitability - Industry firms are forecast to benefit from growth across the health care sector - Australia's ageing population will boost demand for industry equipment over the next five years - Industry firms will remain highly profitable due to the specialised nature of their products 	<ul style="list-style-type: none"> - Converging technologies to develop new applications for various markets - Programs such as Cooperative Research Centres have encouraged commercially focused research - Cuts to biotechnology budgets and programs have created uncertainty - Biotechnology products will become increasingly important - Synthetic biology applications may create new opportunities - Government research agencies are projected to collaborate with universities to improve funding - The industry will continue to generate low profit margins and rely on government tax breaks

Source: IbisWorld Industry Reports: Health Services in Australia, Medical and Surgical Equipment Manufacturing in Australia, Biotechnology in Australia, Scientific Research Services in Australia.

3. Health innovation and care trends

Employment across all sectors is going to see a host of changes and developments in the coming years. Advances in technology, advancements in knowledge and research, improvements to the quality of life and further globalisation of the economy are just a few of the changes that may impact the health care sector.

3.1 Technological change

Technological development is potentially going to be the greatest source of change for the health care industry as current technologies are improved upon and entirely new technologies are developed. Forms of artificial intelligence (AI) could be used to diagnose illnesses more quickly and accurately than any human, to synthesise new highly advanced drug treatments, or to perform surgery with such precision and speed.³

AI will be a tool to be a tool increasingly used by doctors. AI will make health care faster and more reliable. AI can also improve accessibility as online at-home diagnosis tools may be able to provide health care at any location, no matter the time, without having to make or wait for an appointment.⁴ In non-patient-facing roles, AI will be able to aid greatly in the research and manufacturing of medicines, as advanced models may be able to simulate drug trials without needing any time or patients to do so.

Apart from AI, there are lots of technological changes that will impact the way health care is delivered. Advanced manufacturing tools such as 3D printers may revolutionise treatments for physical traumas, and gene tools like Crispr may be able to identify and treat genetic diseases.⁵ Stem cells may eliminate the need for organ and blood donors, as patients can use their own samples to grow new organs.

The capacity for technological change in health care is so vast that it is difficult to predict what it will look like, even ten years from now. But in any case, no matter what technology is available, there will still need to be trained professionals to use the tools that present themselves and to oversee and check that they are working as intended.

³ Foresee Medical. Available online at URL: <https://www.foreseemed.com/artificial-intelligence-in-health-care#:~:text=Deep%20learning%20AI%20can%20be, costs%20associated%20with%20health%20care%20delivery.>

⁴ Panch, T., Mattie, H. & Celi, L.A. The “inconvenient truth” about AI in health care. *npj Digit. Med.* 2, 77 (2019). <https://doi.org/10.1038/s41746-019-0155-4>

⁵ Rahman, Md. R., Hossain, Md. A., Mozibullah, Md., Mujib, F. A., Afrose, A., Shahed-Al-Mahmud, Md., & Apu, Md. A. I. (2021). CRISPR is a useful biological tool for detecting nucleic acid of SARS-CoV-2 in human clinical samples. *Biomedicine & Pharmacotherapy*, 140, 111772. <https://doi.org/10.1016/j.biopha.2021.111772>

3.2 Demographic change

Australia, like many developed economies, is experiencing a significant demographic shift towards an aging population. This shift is expected to have a profound impact on the health care industry in several ways.

- Increased demand for health care services: With a larger proportion of the population entering old age, there will be an increased demand for health care services. This will place significant pressure on the health care system, particularly in areas such as aged care, rehabilitation, and chronic disease management.
- Greater need for specialised health care services: As the population ages, there will be a greater need for specialised health care services, such as geriatric medicine, palliative care, and dementia care. The industry will need to invest in the training and development of professionals with the necessary skills and knowledge to provide these services.
- Rising health care costs: costs are likely to increase with the aging population due to the increased demand for services. The industry will need to find ways to provide high-quality care while containing costs.
- Shortage of health care professionals: There will be a continued shortage of health care professionals due to the aging population's increased demand for health care services.
- Increased use of technology: The health care industry is likely to rely increasingly on technology to manage the growing demand for services. This may include the use of telehealth and other digital health technologies to improve access to services for people in remote and rural areas.

3.3 Changing service delivery methods

Service delivery is undergoing some changes. As work from home becomes more popular, medical practitioners are having to shift away from the centre of the city towards the outer suburbs, where many workers are now looking to go on their workdays, instead of into the office.

Changes in service delivery are often facilitated by technological advancements, such as programs like Teams or Zoom. Not only did this software allow for other employees to search further out for their medical service, but it has also allowed for medical appointments via telehealth, where a patient can speak to a doctor remotely, and, depending on the illness, receive a diagnosis and treatment.⁶

Another recent development in service delivery has been the rise of at-home care. By allowing certain sick people to stay out of the hospital system and giving them treatment in their own homes, the cost of treatment comes down, as floorspace doesn't need to be dedicated to the patient, and the care is generally more effective, as individuals are readmitted to hospital less frequently afterwards.⁷

⁶ Chuo, J., Macy, M. L., & Lorch, S. A. (2020). *Strategies for Evaluating Telehealth*. *Pediatrics*, 146(5), e20201781. <https://doi.org/10.1542/peds.2020-1781>

⁷ Levine, D. M., Ouchi, K., Blanchfield, B., Saenz, A., Burke, K., Paz, M., Diamond, K., Pu, C. T., & Schnipper, J. L. (2019). *Hospital-Level Care at Home for Acutely Ill Adults*. *Annals of Internal Medicine*, 172(2), 77. <https://doi.org/10.7326/m19-0600>

But like technology, changes in service delivery are extremely difficult to predict. Diagnosis and treatment are trending towards occurring at home, but this could change at any time. A new, non-portable technology could mean a shift back to medical facilities like a doctor's office for check-ups.

3.4 Commercialisation of research

The commercialisation of research refers to the process of translating scientific discoveries and technological innovations into commercially viable products, processes or services that can be brought to market. This involves taking the knowledge and intellectual property developed through research and developing it into a commercial product or service that can be sold to consumers or businesses.

The process of commercialisation typically involves several stages, including identifying commercial opportunities, securing funding and investment, protecting intellectual property, developing prototypes, conducting clinical trials (if applicable), obtaining regulatory approval (if applicable), and marketing and selling the product or service.

The commercialisation of research is critical for economic development from the health innovation and care economy. It can help to drive higher economic growth, as well as improve quality of life by bringing new products and services to market.

In many cases, the commercialisation of research is a collaborative effort between researchers, industry partners, investors and government agencies. The Australian government has made efforts to encourage greater collaboration between industry and research institutions to drive innovation and commercialisation, but there is room for improvement.

One of the key strengths of the Australian research sector is its focus on applied research and its ability to translate scientific discoveries into commercial products and services. Australia, and the Eastern Region, have world-class research institutions and a highly skilled workforce, which provides a strong foundation for commercialisation. However, there are barriers. One of the biggest challenges is access to funding, particularly early-stage. There is also a lack of a strong venture capital ecosystem compared to other countries such as the United States. In addition, there is often a cultural gap between research institutions and industry, which can make it difficult to establish effective collaborations. There is also a need for greater support for intellectual property protection and technology transfer.

Despite these challenges, there have been some notable success stories in commercialising research in Melbourne. For example:

- **CSL Limited:** CSL is a global biotech company that develops and delivers innovative medicines and vaccines to patients around the world. CSL started as a small government laboratory in Melbourne in 1916 and has since grown to become one of the largest biotech companies in the world. The company's products are used to treat a range of medical conditions, including bleeding disorders, immune deficiencies, and neurological disorders.
- **Nanosonics:** Nanosonics is a medical technology company that specialises in developing infection prevention solutions. The company's flagship product is the Trophon EPR, a disinfection system

that uses ultrasound to kill harmful pathogens on medical devices. Nanosonics was founded in Melbourne in 2000 and has since grown to become a global leader in infection prevention.

- Epworth Health care: Epworth Health care is a private hospital group that operates several hospitals and health care facilities across Melbourne. Epworth is known for its research and innovation in health care, including its groundbreaking work in robotic surgery, cancer research, and personalised medicine. The hospital group has several partnerships with research institutions in Melbourne, including the University of Melbourne and Monash University.
- Neuren Pharmaceuticals: Neuren Pharmaceuticals is a biotech company that develops drugs for the treatment of neurodevelopmental disorders. The company's lead product, Trofinetide, is a potential treatment for Rett syndrome, a rare genetic disorder that affects brain development in girls. Neuren Pharmaceuticals was founded in Melbourne in 2002 and has since grown to become a global leader in neurodevelopmental research.

In the Eastern Region, Monash University is a world-class research institution that has had notable success stories in commercialising health research and helping products and treatments to market through their clinical trials, including the creation of the drug Relenza for influenza, the development of the bionic eye, the creation of a blood test for Alzheimer's disease and the development of a new treatment for drug-resistant tuberculosis.

The recently created BioCurate aims to boost commercialisation. BioCurate is a collaborative venture involving Monash and Melbourne Universities for translating Australian medical research and delivering health and economic benefits internationally. BioCurate aims to grow the Victorian and Australian biotech sector by translating medical research outputs into high-quality pre-clinical candidates for the biopharmaceutical industry, venture capital companies and philanthropic funding agencies. A critical gap in capitalising on Melbourne's health innovation is the commercialisation of its research, so collaborations such as this are vital.

3.5 COVID-19 and the exposure of global supply chain risk

Current events are causing Australia to rethink its position in global supply chains. In particular, the COVID-19 crisis highlighted the fragility of global supply chains, and the current geopolitical tensions between Australia and China have also informed a rethink of what trade, production and consumption may look like domestically in the future. This has implications for how Australia, and Australian industries, view themselves with respect to global supply chains.

Where not long ago, Australia saw its role as an increasingly service-providing economy that also exported raw or semi-processed commodities to international markets, exposure to the disruption of global supply chains and the risks of having critical imported goods (for example, vaccines) at the mercy of these disruptions, has encouraged business and government to reconsider this arrangement.

While Australia will not go back to its manufacturing heights of the mid-1900s, there is an increasing opportunity for Australia to reconceptualise its role in the global supply chain. This may be through the retention of certain value-adding processes to products before export, through the 'reshoring' of certain high-value product manufacturing, or the exporting of advanced manufacturing processes and products to leverage the intersection between the highly skilled services sector and advanced manufacturing.

4. Economic development and planning trends

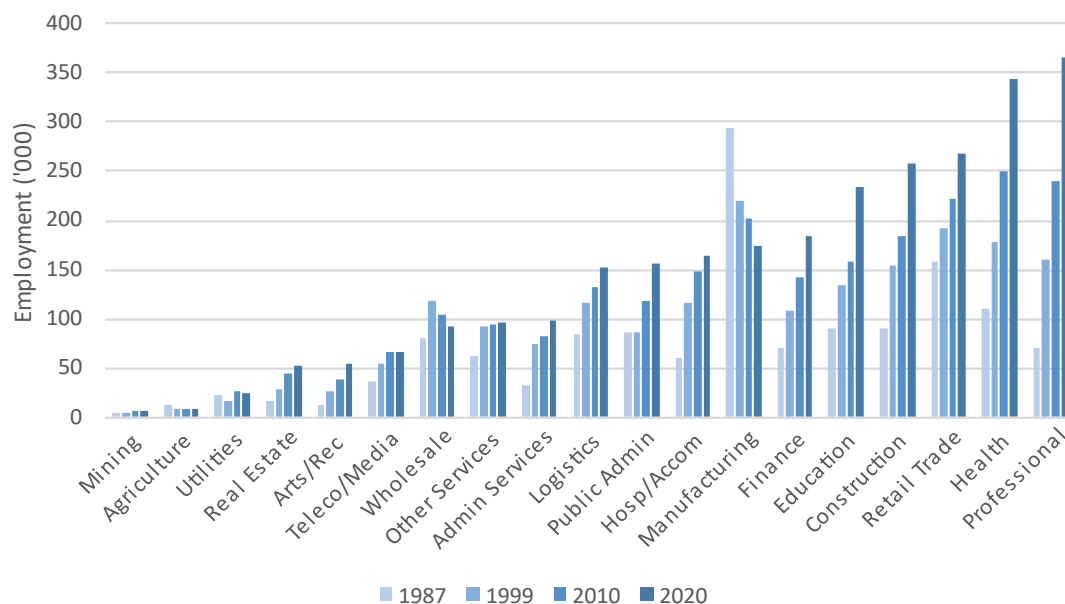
The HI&C economy in the Eastern Region is connected to national and global markets and will be impacted by decisions made at the state and federal levels. This chapter explores the broader metropolitan context and the trends shaping change in planning and economics.

4.1 Metropolitan context

Melbourne's economy has undergone significant structural change over the last 30 years. The former manufacturing-based economy has transformed into a diversified post-industrial economy driven by knowledge-intensive services to drive economic output and innovation.

Over the last 20 years, knowledge sectors (professional services, finance etc.) have represented around 30 per cent of jobs and 50 per cent of economic growth. Conversely, traditional industrial jobs (manufacturing, agriculture, mining) only represent 5 per cent of new jobs and contributed 15 per cent to economic growth in Greater Melbourne. The figure below shows the number of jobs by industry in Greater Melbourne from 1987.

FIGURE 5: ECONOMIC STRUCTURAL CHANGE, MELBOURNE



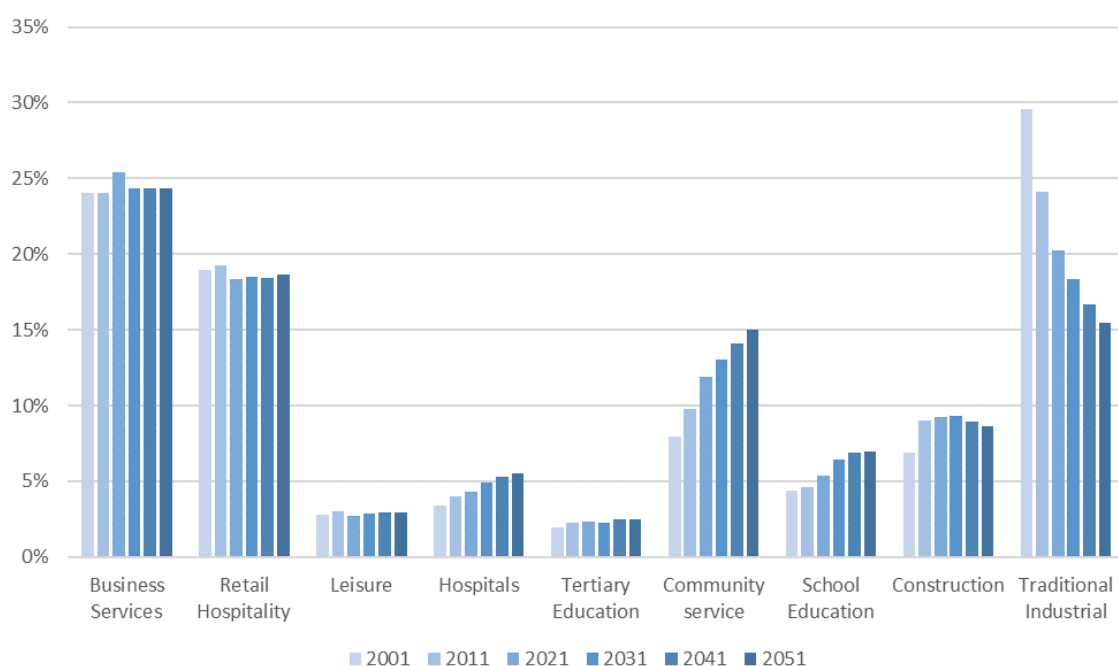
Source: SGS Economics and Planning, based on ABS census, 2021

This new knowledge economy has different needs and drivers from traditional industrial or historical population-serving employment. Knowledge-intensive activities require access to deep and diverse skills and client bases. This depth enables knowledge industry businesses to specialise and build

resilience. As a result, they benefit from highly connected locations, needed to attract and retain highly skilled/specialised labour and interact with a diverse range of other businesses. Knowledge economy workers are attracted to diverse, high quality and high-amenity environments.

Health (represented by hospitals and community service) will continue to be the fastest growing (in terms of jobs) sector in the Melbourne economy over the next 20 years (Figure 6). This role includes GPs, hospitals, specialist clinics, pathology, research, aged care, (health) education and a need for a wide range of other support services (i.e., manufacturing, cleaning, maintenance, etc.). Locations near existing major hospitals can capitalise on this growth. Employment areas that can attract key health anchors and align them with education will also see strong economic growth through the diverse economic ecosystem around these anchors.

FIGURE 6: HISTORIC AND PROJECTED INDUSTRY SHARES ACROSS GREATER MELBOURNE



Source: SGS Economics and Planning, based on ABS census, 2021

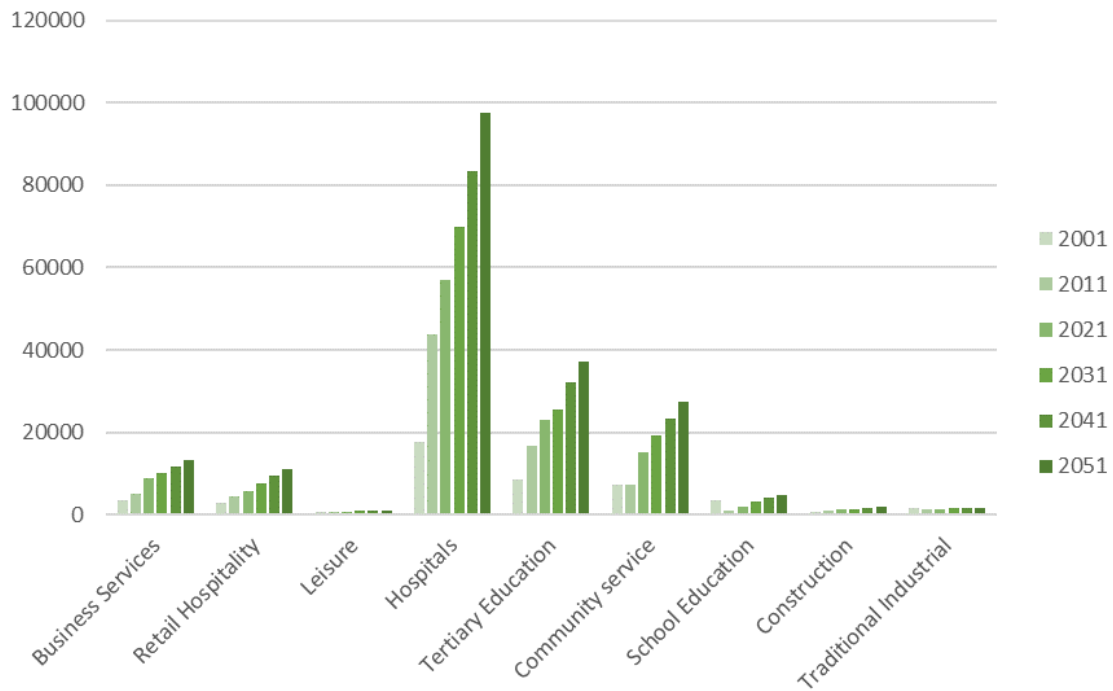
These trends will also affect activity centres as they experience an increasingly diverse service offer beyond retail. Consumers now expect a broad range of services, much more than just traditional retail needs. Activity centres will increasingly provide a broad range of place-based services, such as lower-order health services, including GPs, Osteopaths, Psychologists, Physiotherapists and so on.

Using data derived from the 2021 ABS census, SGS’s small area land use projection offers an economic profile of Melbourne over the next 20 years. The employment market appears to be entering a care and service period, as a decreasing proportion of traditional industrial workers is matched by an increase in health care, education and other community services.

Health and education precincts across Melbourne are predicted to see some of the highest growth in job numbers and development over the next 20 years. In health and education precincts, the most significant jobs growth will be in hospitals, with predicted growth of 50 per cent over the next 20 years.

Small health care facilities (GPs, dentists, etc.) in the community services grouping won't grow as much in precincts because they are spread throughout the city to serve local populations.

FIGURE 7: HISTORIC AND FORECAST WORKFORCE - HEALTH AND EDUCATION PRECINCTS IN GREATER MELBOURNE



Source: SGS Economics and Planning, based on ABS census, 2021

Health care precincts provide jobs and access to services locally, strengthening local economies, but also have a place in a broader hierarchy and network of places that contribute to productivity and innovation across the Eastern Region and Metropolitan Melbourne. These are important to consider in terms of informing the role and purpose of specific precincts and the subsequent planning of health facilities.

There is an opportunity to leverage this employment growth and direct it into places that align with the broader ambitions of Plan Melbourne, particularly providing access to jobs and achieving 20-minute cities. These sectors are key opportunities to provide access to employment in suburban areas. As neighbourhoods transition to more retail and other services, how health (in particular) services interface with activity centre planning will also be important to consider. The health sector is key to providing liveable, strong communities and 20-minute neighbourhoods while also considering productivity gains around clustered anchor institutions such as hospitals.

4.2 The trends shaping change

A number of macroeconomic and more localised trends have and will continue to impact the Eastern Region's health innovation and care economy. These trends are both things that must be responded to as change occurs and opportunities for the Region to build on.

A transition from a manufacturing to a services economy

The past thirty years have seen a profound restructuring of the Melbourne economy. The metropolis has transformed from an industrial city into a knowledge-intensive economy. This structural change has impacted the composition and location of employment across Metropolitan Melbourne.

There have been many explorations of the new or 'recombinant economy' of the city, including those by Hutton (2010) and Moretti (2012). Hutton (2010, p. 279) described Melbourne as a 'hybridised structure of cultural production, creative labour and technology' where both new and old economy industries coexist through collaboration, competition and consumption. Often the former industrial areas, of the inner city in particular, contain remnants of the industrial past alongside new knowledge and creative uses.

Employment in manufacturing (as traditionally defined) will likely continue to decline, while employment in professional and financial services will increase. A range of population-serving industries will also expand, including health care, retail and education. The expected changes in manufacturing show a nuanced picture of a sector transforming rapidly, competing in an increasingly globalised economy.

Knowledge-based industries encompass research and development (R&D), design, engineering, marketing, advertising and creative industries, as well as more traditional jobs such as lawyers, bankers, financiers, doctors and management consultants. Many of these activities overlap with production and manufacturing and could present growth opportunities for the sector. This is particularly so as more hybrid roles emerge with technological advancements, allowing for movement up the value chain (e.g. rapid prototyping, 'customise-make-service-sell').

However, while manufacturing jobs may be declining, the value of what Australia manufactures is actually increasing. Since 1989, manufacturing has halved its share of contribution to Australia's economic activity (from 12% to 6%) while professional, scientific and technical services and financial services combined have increased by almost half (to 17%). Significantly though, while manufacturing has declined as a share of total economic activity, the size of its contribution has increased by 16% over that time. This suggests that while manufacturing has been overtaken by knowledge-intensive service industries, its economic contribution continues to grow. This is likely driven by advances in both what is produced and how it is produced.

This transition to high-value production and advanced manufacturing technologies presents a significant opportunity for the Eastern Region to build on its established manufacturing specialisation.

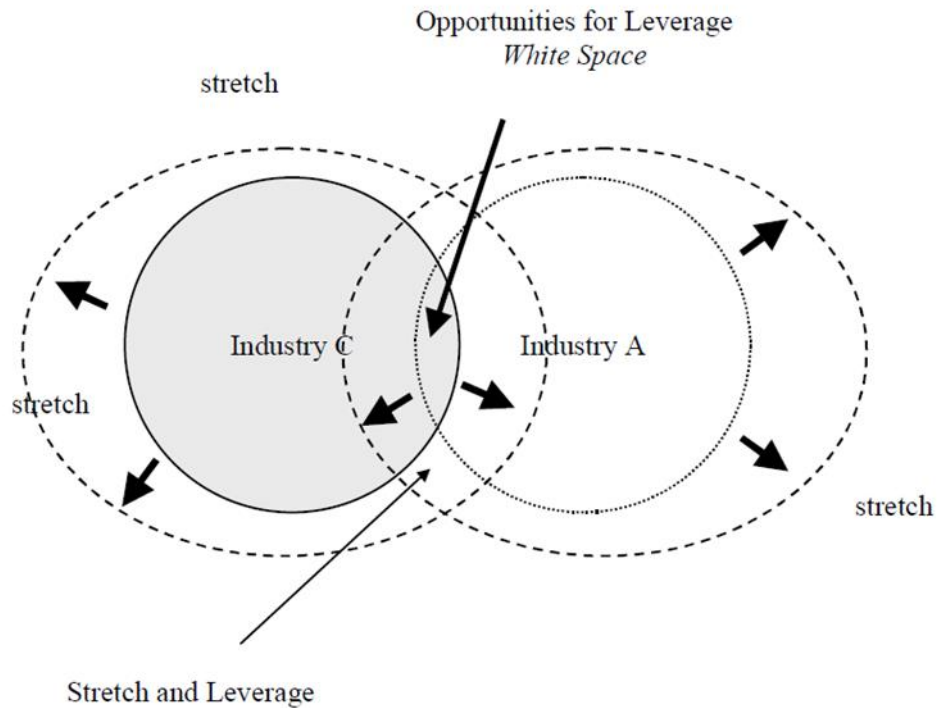
Leveraging the overlap of complementary industries

Future innovation will increasingly come from the intersection of different industries. This is illustrated in the 'Stretch and Leverage' concept (further explored in Paper #4). This is an economic development

framework that focuses on the expansion and interaction of existing industries to create new opportunities.

Stretching involves expanding existing resources, infrastructure and core competencies of an industry sector (e.g. building on the strengths of existing sectors and industries). The leverage approach leverages resources between industries to create new hybrid industries in white space between industry sectors.

FIGURE 8: STRETCH AND LEVERAGE MODEL



For the Eastern Region, this presents an opportunity for the traditionally strong industries of manufacturing and health to understand how their operations may be able to more intentionally interact with one other as a means of identifying and capitalising on region-specific competitive advantages and, in so doing, attract investment and businesses to the Region.

Climate change and circular economy

There has been an increasing global emphasis on the acute need to achieve net zero carbon emissions globally if we are to minimise the impacts of temperature rises on climate change. As of June 2021, G7 Nations have re-focused efforts on the back of the Paris Climate Accord to accelerate efforts to achieve Net Zero.

In January 2021, a report authored by a panel of Australia's leading experts on emissions reduction policy was released⁸, describing Australia's current progress towards its Paris Climate Accord targets. It found that Australia would need to commit to a 74 per cent reduction in emissions by 2030 in order to be compliant with global efforts to keep warming below 1.5 degrees. Reaching these targets poses a major challenge and will require action at every scale of business and governance.

The focus on decarbonisation of the economy is focused on limiting carbon output and minimising global temperature rises. This requires a concerted and structural change across all aspects of the economy.

The medical industry currently has some practices that rely upon heavy waste production and energy consumption, and as the Melbourne economy changes, these practices may have to as well. The use of disposable equipment to avoid cross-infection creates a substantial amount of waste, but this practice is unlikely to change unless an alternative that is as or more effective can be implemented.⁹ Medical waste may instead be taken to a specialist cleaning facility to be cleaned for reuse. Activities of intense power usage are also likely to change to more efficient processes, although this is unlikely to affect the hospitals themselves, as the burden of clean energy production is on energy suppliers, not the medical facilities.

Capturing locally created wealth to develop innovative and localised supply chains

While economic activity has been growing in Australia, in many places its contribution to the local community through providing secure employment and small business opportunity is limited. A key aspect of building an inclusive economy is a change of mindset. We must think not only about what we can attract or construct through external investment, but about what we already have and how to leverage supply chains and existing knowledge better.

The distribution of wealth (who owns land, businesses, technology etc) is a critical policy issue. If a local economy can distribute wealth to more of its residents through support of small businesses and local enterprises, this will have positive flow-on impacts. Wealth will be retained within the local economy, instead of being sucked back out through profits and dividends to remote/ external stakeholders.

Support for local industries, local innovation and local enterprise is a critical, and often under-respected component of economic development. Locally owned businesses are far more likely to:

- Be committed to the local area and retain wealth (profits) within localities
- Create effective local economic multipliers and recirculate local income by using local suppliers and local workers
- Bring greater social returns, and
- Build long-lasting prosperity

Large companies and institutions (like hospitals) have an outsized role and responsibility in community wealth building. The term 'anchor institutions' is used to refer to organisations that have an important

⁸<https://www.climatecollege.unimelb.edu.au/files/site1/docs/%5Bmi7%3Aami7uid%5D/ClimateTargetsPanelReport.pdf>

⁹ Conrardy, J., Hillanbrand, M., Myers, S., & Nussbaum, G. F. (2010). Reducing medical waste. *AORN Journal*, 91(6), 711–721. <https://doi.org/10.1016/j.aorn.2009.12.029>

presence in a place, usually by virtue of being large-scale employers, the largest purchasers of goods and services in the locality, overseeing large areas of land and having relatively fixed assets. Examples include universities, large local businesses, hospitals, and training organisations.

Anchor institutions are a form of 'sticky capital,' maintaining long-standing community and social connections and enduring community development capacity but are unlikely to close down or relocate from their community. They play an important role in community wealth-building due to their capacity as large employers, their sizeable procurement spending, infrastructure (including land and facilities) and assets. Because of their engagement in national and global markets, anchor institutions play important roles in linking broader macroeconomic developments with hyperlocal issues to create opportunity, prosperity and inclusive growth.

Community wealth building is about public service. Anchor institutions and businesses can work together in a locality to produce positive outcomes, often 'more than the sum of their parts'. This does not mean that all economic activity remains local for the health innovation and care economy in the Eastern Region. Instead, there is an opportunity to maximise the creation of value through the concerted development of localised supply chains to enable those businesses to operate more efficiently, benefit from the principles of agglomeration and build products and services for export (domestically and internationally) that are better because of the existence of such partnerships.

A community wealth building framework is developed in working paper #5.

5. Summary - opportunities for the Eastern Region

The research for this paper has revealed a long list of opportunities for the Eastern Region and its HI&C economy. These include:

- Capture an outsized share of the state and federal governments' health expenditure and capital investments to grow the HI&C economy in the region.
- Shift the needle from business as usual to take advantage of rapidly developing changes in service provision and move quickly to develop advantages — examples leading the nation in developing an at-home care sector.
- Leverage advanced manufacturing and regional specialisations to lead in the advanced manufacture of medical products. Advanced manufacturing has been heavily promoted by state and federal governments and is supported through attempts to re-shore some of Australia's manufacturing capabilities. The Region already has manufacturing critical mass and a demonstrated focus on R&D and innovation to take a leading role.
- Utilise the region's research and clinical trial assets to lead in the commercialisation of research, an area of focus for government and industry.
- Lead the transition towards a circular economy in the health sector. The scale of the Region in terms of size, industry diversity and mass creates an opportunity to develop the Region as a leader in circular economy. The health care and manufacturing industries are heavily material-dependent and waste-producing, which creates an opportunity to explore the circular economy and work with businesses to embed localised supply chains by aligning both upstream and downstream businesses – such as medical device and equipment manufacturers and commercial recycling and waste recovery businesses.
- Increase the Eastern Region's ability to support existing major health clusters in elsewhere Melbourne (like Parkville) that depends on the Eastern Region's strengths in the HI&CE.

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