Australian Government
Australian Trade and Investment Commission

Life Sciences in Australia

Industry Capability Report

AUSTRALIA

About us

The Australian Trade and Investment Commission (Austrade) is Australia's leading trade and investment agency.

We are experts in connecting Australian businesses to the world and the world to Australian businesses.

We help companies around the world to source Australian goods and services for their global supply chains as well as identify and take up investment opportunities in Australia.

To discover how we can help you and your business, visit: austrade.gov.au

Contents

Acknowledgement of country

In the spirit of reconciliation we acknowledge the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

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Why life sciences in Australia

1. A thriving and integrated life sciences ecosystem

Australia's life sciences sector is one of the largest in the Southern Hemisphere strategically located in the Asia Pacific Region, with nearly 3,000 organisations partnering across every part of the value chain and a total sector value of almost A$250 billion[1]

2. A stable economic, legal and regulatory environment

Australia is recognised for its strong regulatory and legal frameworks that support a robust R&D environment and enable partnership success

3. Generous incentives to enable R&D collaboration and partnership

Australia offers an up to 43.5% refundable R&D tax incentive and a range of grants and other incentives for eligible companies to support local R&D collaboration

4. Globally respected medical research capability

Australia is a world leader in health science and healthcare innovation with outstanding health research infrastructure and top ranking universities and medical research institutes that rank in the world's top 1% in 15 individual areas of research including clinical medicine[2]

5. A world leading clinical trial ecosystem

Australia's clinical trials sector is substantial; offering cost effective, efficient and high quality trials with integrated ethical approval systems, it ranks among the top nations for clinical trial quality, patient recruitment and speed to market

6. Advanced clinical development and manufacturing capability

Australia is home to a growing number of globally competitive clinical development and manufacturing organisations (CDMOs) providing end-to-end support from preclinical development through to GMP scale production all within a trusted regulatory environment

7. A biotech sector recognised for global success

Australia's local biotechnology industry has a long history of success and regularly ranks in the top 5 for biotech innovation

8. A history of world leading medtech innovation

Australia is a recognised world leader in medtech with a track record producing world leading innovation, building world leading companies and fast adoption of new technologies

9. A future focused government agenda to grow national strategic capability

Australia has prioritised a range of critical technology fields that complement the nation's existing research, intellectual and industrial strengths and are important for future strategic capability

10. A national network of life science expertise enabling research, translation, development and commercialisation

Australia's thriving life sciences sector is represented across all states and territories with companies, universities, research institutes, hospitals, clinical trials providers and manufacturers collaborating across national networks

1 A thriving and integrated life sciences ecosystem

2 A stable economic, legal and regulatory environment

3 Generous incentives to enable R&D collaboration and partnership

4 Globally respected medical research capability

5 A world leading clinical trial ecosystem

6 Advanced clinical development and manufacturing capability

7 A biotech sector recognised for global success

8 A history of world leading medtech innovation

9 A future focused government agenda to grow national strategic capability

10 A national network of life science expertise enabling research, translation, development and commercialisation

Executive summary

Australia's thriving and integrated life sciences ecosystem holds a distinct and critical position within the global landscape, due to its strength, innovation and strategic connectivity to the Asia Pacific region.

As the world's largest island nation with seven states and two territories, Australia is a stable economic and regulatory hub connecting world class standards to regional markets.

Australia is home to one of the largest life sciences industries in the Southern Hemisphere:

- Home to nearly 3,000 life sciences organisations, including 1,592 biotech and medtech companies[3]
- Employing close to 350,000 people across a sophisticated and world class workforce[4]
- Currently valued at over A$250 billion, with significant growth of 40% since 2021[5]
- Partnerships and deals worth approximately A$67 billion in deals executed in the biotechnology sector domestically and internationally between 2017 and 2024.[6]

Its proximity to the Asian and Indo-Pacific markets is critical and our economy is the 13th largest in the world.[7] Australia maintains strong economic relationships with many of the world's fastest-growing economies:

- 19 Free Trade Agreements[8]
- Medical product exports the greatest cumulative value-add export industry since 2016[9]

World class research, development and infrastructure

Australia offers unique competitive advantages that make it an attractive, low-risk destination for collaboration and long-term strategic partnerships. Australia is a reliable, productive, and sophisticated partner that excels across the entire life sciences value chain—from research and discovery to commercialisation and manufacturing.

3rd Australia's healthcare system is ranked 3rd in the world[10]

5th on the World Index of Healthcare Innovation[11]

9th in the world for life sciences research[12]

Ranked 4th in the OECD for its capacity to attract and retain highly educated workers,[13] Australia's skilled workforce is future-proofed with a strong pipeline of talent from our world class universities:

- Fifteen of Australia's universities are in the top 200 globally[14]
- Two – the University of Melbourne and the University of Sydney – are ranked in the top 25 for life sciences and medicine[15]

Australia's extensive capabilities in life sciences and research are underpinned by a world class research and translation infrastructure, anchored by leading universities and medical research institutes. Australia ensures a transparent and supportive legal environment:

- Ranked 2nd globally for intellectual property (IP) protection[16]
- Responsible for around 1.5% of global pharmaceutical patents, similar to Israel and Switzerland[17]

High quality, competitive clinical trials and regulatory efficiency

Australia is recognised as a global leader in clinical trials due to its efficient processes, highly capable workforce and trusted and supportive regulatory frameworks:

- Clinical trials are highly competitive, due to generous research and development tax incentives, supported by positive exchange rates and competitive operational and salary costs – early phase clinical trials are up to 60% cheaper to run in Australia than the US[18]
- Efficient and effective regulatory and ethical approval systems that enable trials in Australia to commence in as little as four to eight weeks[19]
- The interconnected ecosystem of public and private trial providers offers access to a multicultural and diverse patient population, enabling rapid recruitment and robust data collection.

A connected, capable ecosystem supporting the entire value chain

With deep capacity from research to discovery, translation to development and commercialisation to manufacturing, Australia's life sciences industry excels across the entire value chain supported by a strong and collaborative workforce:

- Australian contract development and manufacturing organisations (CDMOs) operate to global current Good Manufacturing Practice (cGMP) and Good Manufacturing Practice (GMP) standards, facilitating a seamless transition from early-stage trials to commercial production for both domestic consumption and global export
- Growing number of biotech companies reaching maturity
- Innovative and effective organisations supporting multiple functions across translation, execution and delivery
- Supported by a collaborative and highly skilled workforce

A supportive Government and policy environment

The Australian Government has long recognised the importance of life sciences with a decades long commitment to the industry and a future focused agenda to support life sciences growth in the national interest through:

- One of the seven critical technology fields on its *List of Critical Technologies in the National Interest*[20]
- Medical science is one of the seven priority areas for future prosperity through the AU$15 billion National Reconstruction Fund[21]
- The Research & Development Tax Incentive offers tax offsets of up to 43.5% for costs incurred on eligible R&D activities
- Maintaining a transparent and supportive regulatory and legal/IP environment

What is life sciences?

The life sciences industry in Australia is fast growing and dynamic characterised by global excellence in research, development, translation and commercialisation including manufacturing. In this report, life sciences includes health and medical research, clinical trials, medical manufacturing, biotechnology and medical technologies. The quality, efficiency and effectiveness of these sectors in Australia are recognised globally.

Research and development at The Kids Research Institute Australia, Western Australia

Market snapshot

Figure 1 Change in the number of life sciences companies, 2017-24[22]

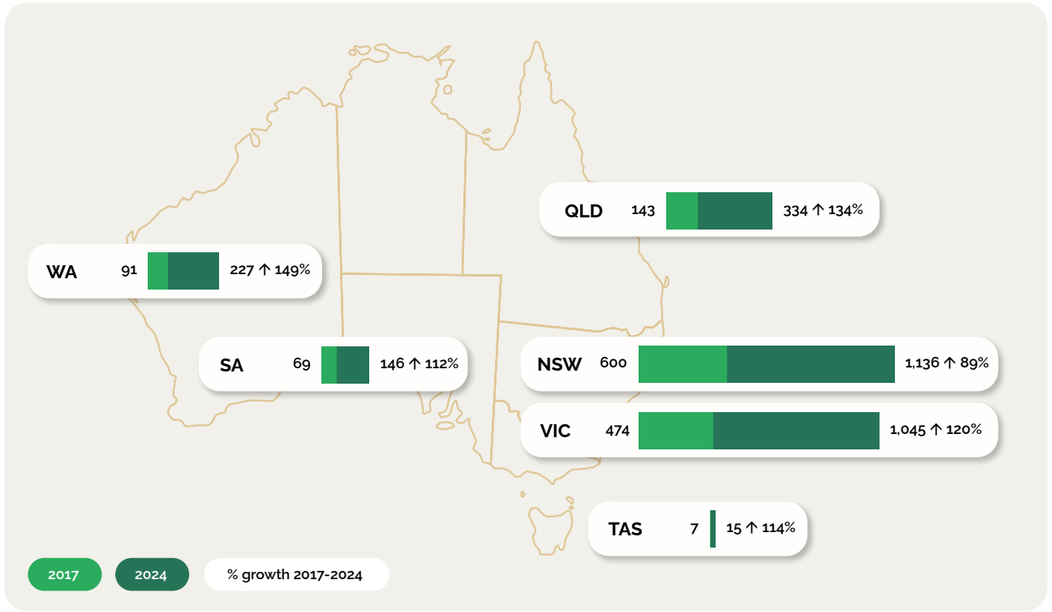
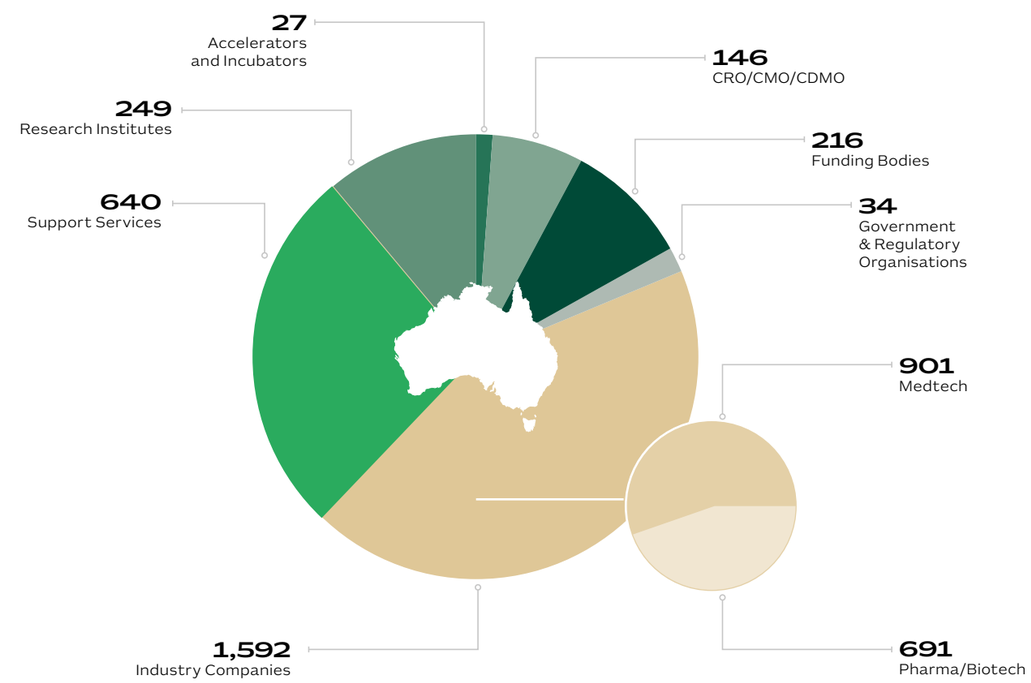


Figure 2 Australia's life science ecosystem[23]



Note: CRO: Contract Research Organisations, CMO: Contract Manufacturing Organisations, CDMO: Contract Development & Manufacturing Organisations.

A thriving and integrated life sciences ecosystem

Australia is home to a thriving and maturing life sciences industry and a Government focused on supporting world class research and development, facilitating high-quality and secure clinical development and accelerating commercialisation.

A rapidly growing life sciences ecosystem

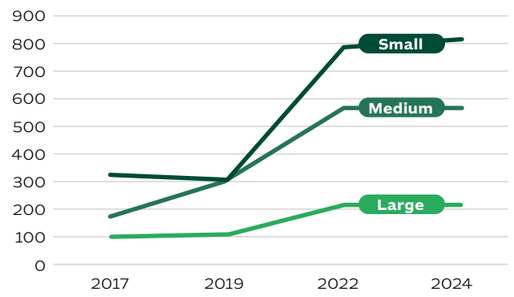
There are nearly 3,000 life sciences organisations in Australia including 1,592 biotech and medtech companies.

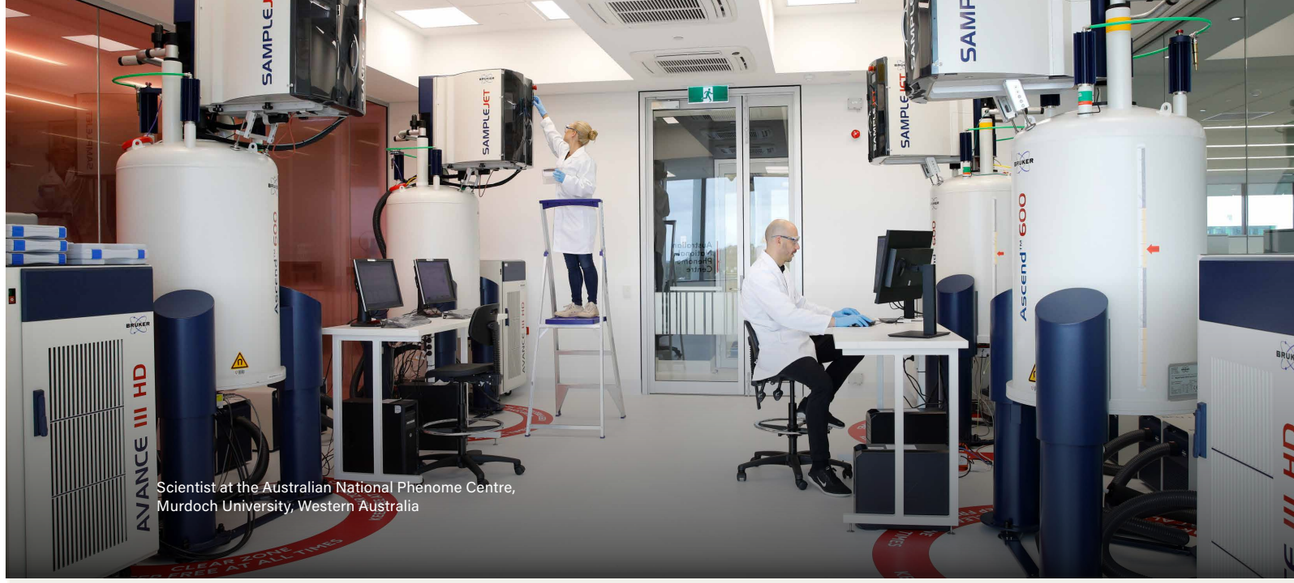
Australia's life sciences industry operates as an interdependent ecosystem with organisations engaged in activities across the entire value chain of life sciences – including medical research, manufacturing, accelerators and incubators, and full suite services organisations. Critically, with the exception of government and regulatory organisations, significant growth was seen in every sector of the industry between 2017 and 2024.

Likewise, the number of small to medium enterprises (SMEs) within the life sciences industry has grown in recent years and at every level from small to large organisations.

Australia also has a number of globally recognised life sciences precincts and hubs. Of the top 100 science and technology clusters in the world, Australia is home to three, one of only ten countries to have this many. [24]

Figure 3 SME representation in the Australian life sciences industry[24]



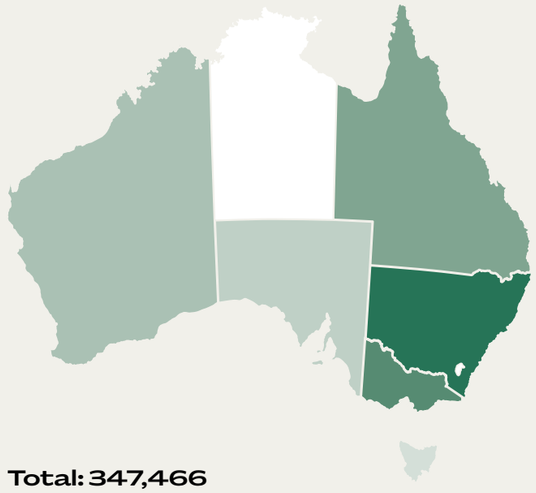


Scientist at the Australian National Phenome Centre, Murdoch University, Western Australia

A strong network of employees and jobs

There are close to 350,000 biotech jobs spread across the Australian life sciences industry.[25] With 22.7 million jobs in Australia,[26] it means that the life sciences industry employs approximately 1.5 per cent of the working population or 1 in every 65 people.

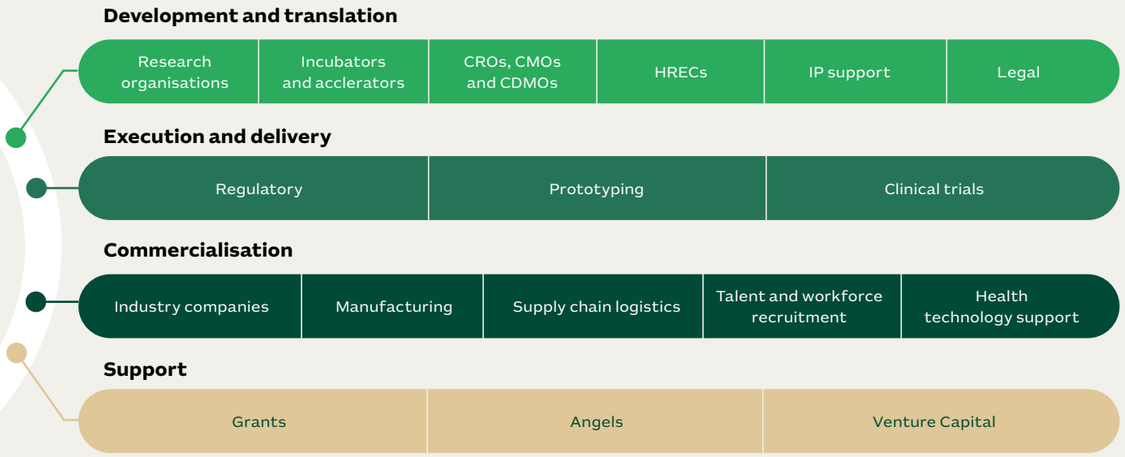
Figure 5 Number of employees by state, 2024



Total: 347,466

Employees in life sciences are engaged directly in research and development and in the support functions below:

Figure 6 Organisations and functions in life sciences



National Innovation Visa (NIV) – a permanent visa for exceptionally talented migrants from across the world. The NIV is for established and emerging leaders with high-calibre talent and skills including global researchers, entrepreneurs and innovative investors.

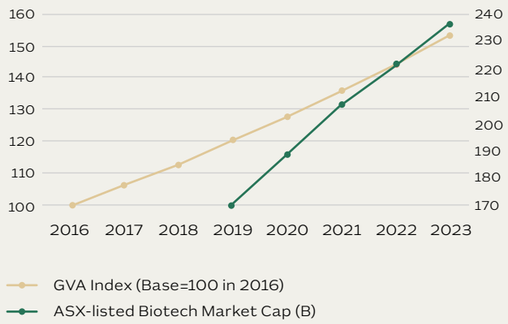
An industry contributing strongly to the economy

The value of Australia's biotechnology industry has been growing steadily since its inception.[27] In 2023, about 200 biotech companies were listed on the ASX with aggregate capital value of AU$242 billion.[28]

The medical products sector market capitalisation increased 22% p.a. between 2016 and 2021 and added A$134 billion to the ASX during that time.[29]

The economic contribution of the medical technology, biotechnology and pharmaceutical sector in Australia as measured by gross value added (GVA) has grown at a rate of 6.3% p.a. since 2016, adding a cumulative A$54 billion in GVA to the Australian economy between 2016 and 2023.[30]

Figure 7 Growth of GVA and market cap in Australia's life sciences sector, 2016-2023



A stable economic, legal and regulatory environment

Australia is recognised for its strong regulatory and legal frameworks that support a robust R&D environment and enable partnership success.

Strong regulatory and legal frameworks

Australia is globally recognised for its strong regulatory and legal frameworks that support the development of biotechnology. Australia is ranked:

- 2nd for IP protection globally
- 22nd on the Global Innovation Index[31]

The Australian Government is committed to working across the international IP arena, particularly with the World Trade Organization (WTO) and World Intellectual Property Organization (WIPO) recognising that IP-related industries, including life sciences, play an important role in driving Australia's international innovation competitiveness.

Australia's Therapeutic Goods Administration (TGA) is recognised globally as a trusted regulatory partner.

The TGA works closely with other regulators and international networks in regulating prescription medicines, medical devices and medical technologies and, where appropriate, seeks to reduce regulatory burden.

Critically, the TGA's Clinical Trials Notification Scheme reduces the regulatory burden on clinical trial sponsors and enables quicker and more efficient trial initiation. Trials in Australia can commence in as little as four to eight weeks and more efficient trial initiation.[34]

Partnering for success

Partnership is critical to the Australian biotechnology sector with around AU$67 billion in deals done domestically and internationally between 2017 and 2024.[32] Australia has become expert at partnering with other organisations at every step of development from desktop research through to commercialisation.

Australian life sciences companies have long delivered successful partnerships with international pharmaceutical and biotech companies, venture capital firms, research institutions and universities. These often leverage government funding and incentives and lead to other collaborations within the local and global ecosystems to accelerate commercialisation and global market expansion.

Fostering collaboration at the QEII Health and Medical Life Sciences Innovation Precinct, University of Western Australia, Western Australia

Generous incentives to enable R&D collaboration and partnership

The Australian Government is committed to supporting the life sciences industry, including in clinical trials.

The Australian Government's Research and Development Tax Incentive program aims to help businesses innovate by offering tax offsets for eligible Research and Development expenditure, reducing the cost to businesses of undertaking Research and Development activities. Eligible companies with less than A$20 million group turnover may receive their benefit as a cash refund.

Additionally, investors may apply for a wide range of programs and funding packages offered by Federal, State and Local Governments, including but not limited to:

- National Health Medical Research Council (NHMRC) is the largest single source of direct government funding for clinical trials in Australia, providing around A$100 million in funding annually through a wide range of programs
- Medical Research Future Fund (MRFF) is doubling Australia's investment in health and medical research and innovation, with a dedicated A$614 million investment over 10 years towards clinical trials activity and international collaboration
- Commonwealth Scientific and Industrial Research Organisation (CSIRO) offers private sector partnerships
- Cooperative Research Centre (CRC) program provides business with public-private research collaborations

The Australian Government is also investing in further enhancing Australia's clinical trials system through a National One Stop Shop (NOSS) for health and medical research. The NOSS will streamline health and medical research through a single, national approvals and data system. This will make it easier for patients, researchers and sponsors to find, conduct and participate in clinical trials and research in Australia.

In addition, the states and territories provide support and initiatives for the life sciences industry. Those initiatives supporting clinical trials can be found at:

- New South Wales Health and Medical Research - Clinical Trials
- Queensland Clinical Trials Directory
- South Australia - Clinical Trials
- Victoria - Clinical Trials and Research
- Western Australia Country Health - Clinical Trials

Medical researchers, The Kids Research Institute Australia, Western Australia

Globally respected medical research capability

Why Australia

Australia is home to a vibrant health and medical research ecosystem:

- Ranked 7th global for health science research and 5th in the World Index of Healthcare[33]
- Over 60% of Australian health and medical research output is ranked as 'above' or 'well above' world standard[34]
- 15 universities in the top 200 globally
- Two Australian universities - The University of Melbourne and the University of Sydney - are in the top 25 globally for life sciences and medicine
- 55 medical research institutes and 40 universities focused on clinical research[35]
- Scientific institutions in the world's top 1% in 15 individual areas of research including clinical medicine[36]

The number of university students in Australia studying STEM subjects has continued to grow with 242,000 students studying in 2022 compared to 209,000 in 2015. The number of students completing their degrees has likewise grown during this period.[37]

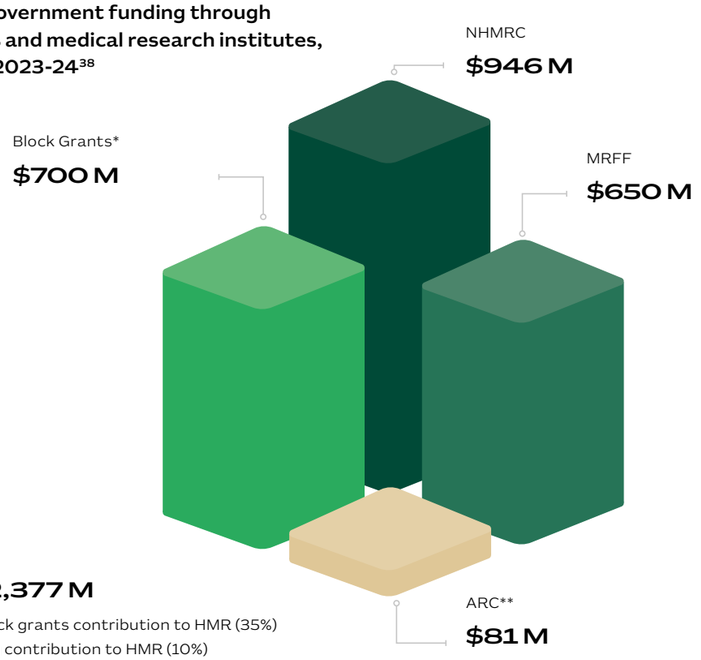
This strong pipeline of students graduating from worldclass universities with expertise in STEM subjects positions Australia strongly for the future.

The health and medical research landscape

The Australian Government is strongly supportive of health and medical research and provides significant funding to it, particularly to higher education and medical research institutes.

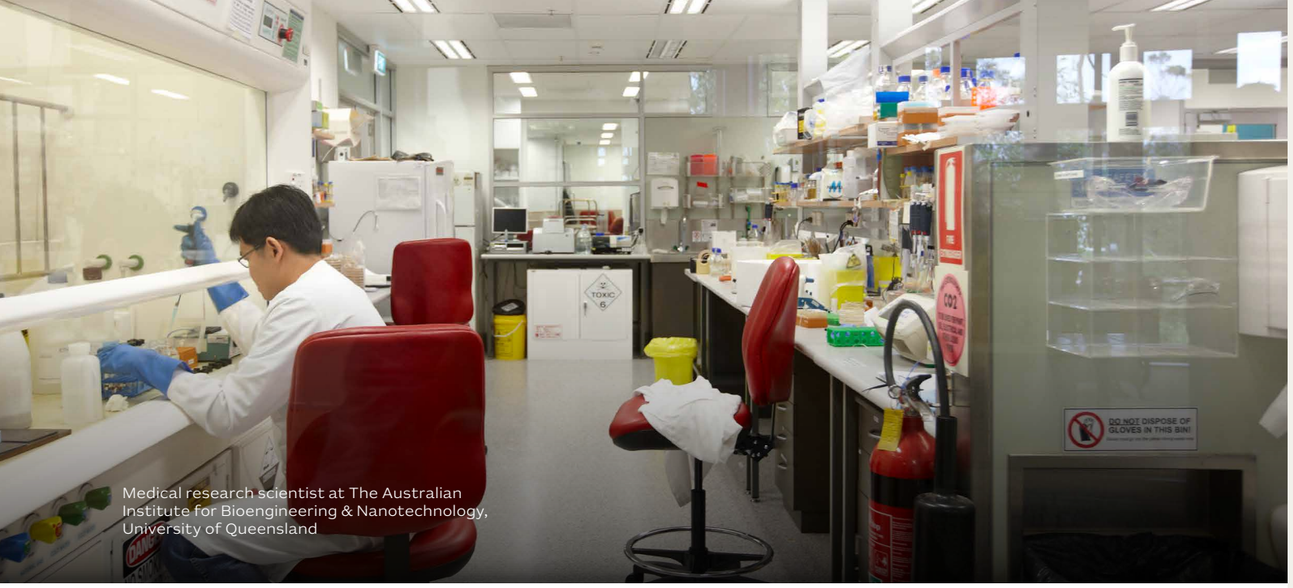
This includes funding through the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) as well as funding provided to universities through block grants. Funding is also provided through the Medical Research Future Fund (MRFF).

Figure 8 Government funding through universities and medical research institutes, estimated 2023-24[38]



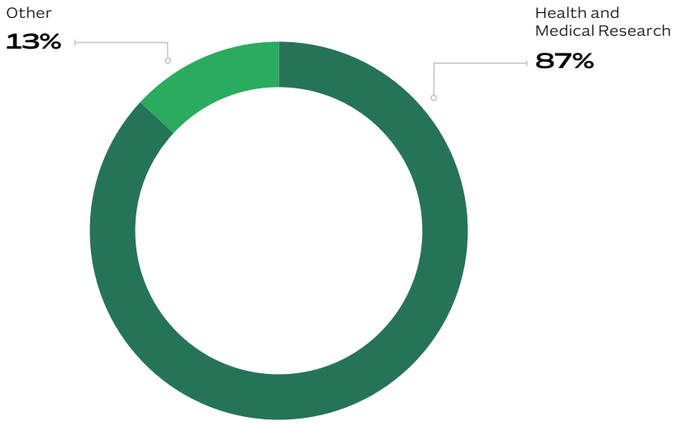
Total: $2,377 M

* Research block grants contribution to HMR (35%)
** ARC funding contribution to HMR (10%)



Medical research scientist at The Australian Institute for Bioengineering & Nanotechnology, University of Queensland

Figure 9 Not-for-profit research and development spend



In addition to Government spending, Australia's not-for-profit sector spent approximately $1.59 billion on research and development in 2022/23 of which 87%, or $1.39 billion, was spent on health and medical research.[39] This concentration of research funding from the not-for-profit sector on health and medical research underscores the strength of Australia's universities and medical research institutes.

In 2024, Australia was home to 249 life sciences research institutes, a growth of over 20% from 2017 when there were 203.[40]

The work of these institutes and their researchers spans a broad range of health challenges, including immunology, tropical health, chronic disease, preventive health, mental health and Indigenous health, and ranges from discovery through to clinical research and translation.

Australian universities are committed to accelerating health innovation.

Over one third (35%) of all research expenditure by the higher education sector is on health and medical research[41] and Australia's researchers are globally recognised for the quality and depth of their work and expertise across numerous critical and emerging technologies, including in neural engineering and brain-computer interface.

Case study

sanofi

Sanofi

In December 2022, global biopharma company Sanofi entered a partnership with the Queensland Government, The University of Queensland (UQ) and Griffith University to establish the Translational Science Hub (TSH) in Queensland, with bases in Brisbane and the Gold Coast. The TSH connects world-class researchers in Queensland with Sanofi scientists in France and the United States of America, placing Queensland at the forefront of global vaccine development and biomedical research.

The $280 million initiative, a first-of-its-kind global scientific community focused on driving mRNA vaccine development and translational science, is bringing more expertise, supply-chain capabilities and clinical investigations to Queensland. A Statement of Cooperation entered into by the foundational partners sets out the strategic intention to collectively catalyse the growth of Queensland's biomedical ecosystem and maximise its potential economic uplift.

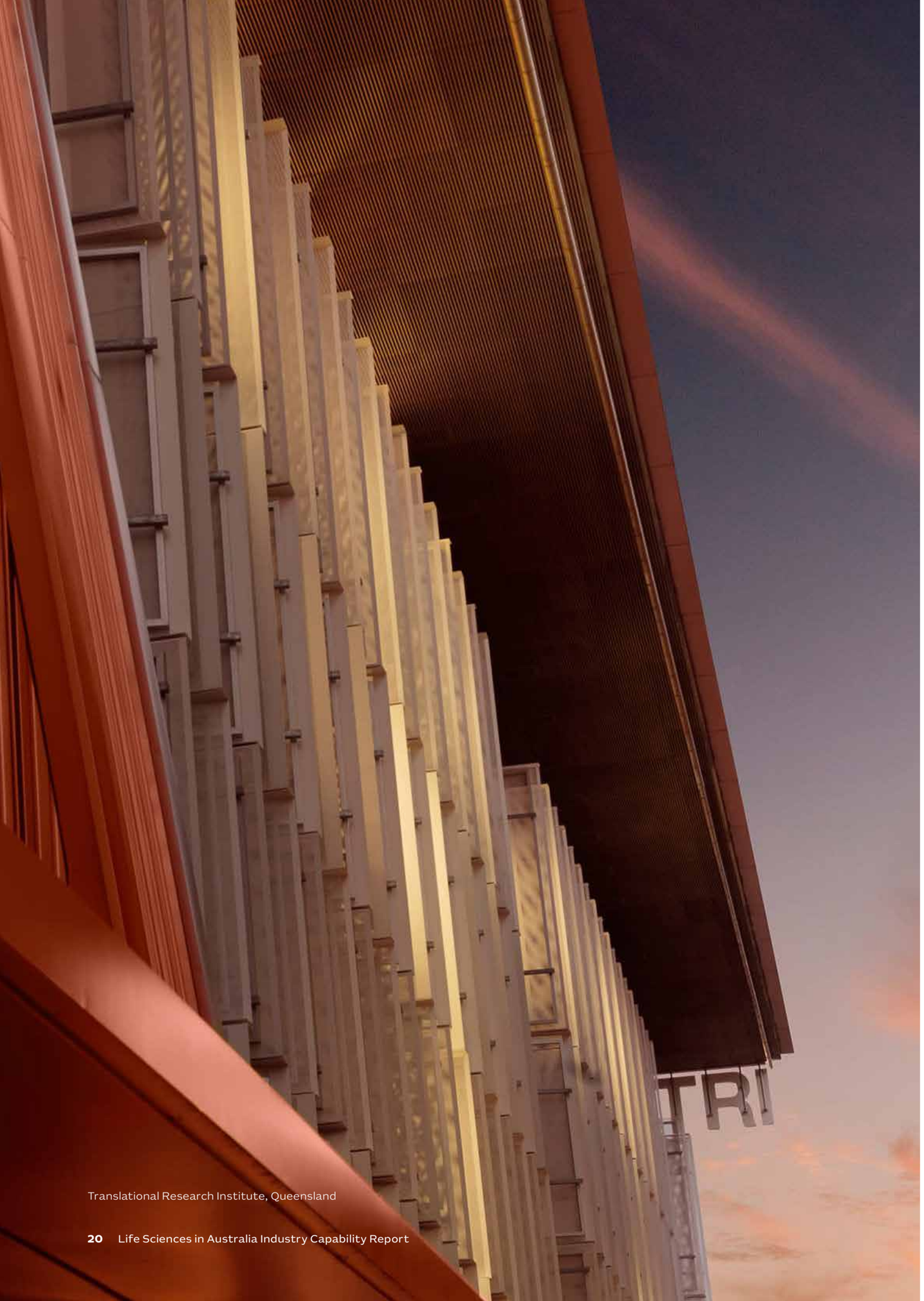
To date, the TSH has focused on developing new vaccines, including the evaluation of mRNA vaccines and a world-first chlamydia vaccine, with 26 clinical trial sites and seven laboratory partners across Australia contracted; 14 research projects and seven vaccine trials commenced; and 46 high-skilled jobs created in Queensland to date. The 14 innovative research projects across The University of Queensland, Griffith University and Queensland University of Technology are directly integrated with Sanofi's scientific teams in France and the United States of America, creating a robust international network of scientific collaboration and knowledge exchange.

Queensland's largest clinical trials network, the University of the Sunshine Coast Clinical Trials, formalised a preferred site partnership agreement with the TSH reflecting a shared commitment to accelerate access to innovative therapies through regional clinical trial delivery. In addition, a major clinical manufacturing contract between Sanofi and IDT Australia will accelerate the establishment of clinical trials in Queensland.

Working together to establish the partnership, Sanofi was impressed by the Queensland Government's ambition to grow the biomedical sector from a strong research foundation. Queensland is home to world-renowned medical researchers and high-ranking universities, such as The University of Queensland and Griffith University – both of whom recognised the opportunities this global partnership would bring.

The advancements of the TSH are overseen by a steering committee chaired by Queensland's Biomedical Advisor, Professor Scott Bell.

The positive impact of the TSH continues with the goal of improving people's lives by leveraging global partnerships to foster ongoing development of the vaccine and therapeutics ecosystem and unlocking the value of local research.



Translational Research Institute, Queensland

A world leading clinical trial ecosystem

Why Australia

Australia is an attractive market for cost-efficient, high quality and fast starting clinical trials:

- Efficient and effective regulatory and ethical approval systems that enable trials in Australia to commence in as little as four to eight weeks
- Long standing research and development tax incentives for eligible companies coupled with a positive exchange rate and competitive operational and salary costs mean clinical trials in Australia are extremely efficient - early phase trials are up to 60% cheaper to run in Australia than the US
- High-quality data collection and compliance with Good Clinical Practice (GCP) guidelines
- World class infrastructure for clinical trials, including purpose-built facilities such as dedicated Phase 1 units and Centres of Excellence
- An internationally recognised universal healthcare system with highly skilled clinicians and medical key opinion leaders well versed in global guidelines and with international reputations
- Multicultural and diverse patient populations, supporting the acceptability and breadth of clinical trial results

An efficient path to market

Australia's world class contract research organisations, clinical trial sites, manufacturing, bioanalytical laboratories and data analytics companies deliver timely results while meeting stringent quality and ethical standards.

Australia's Clinical Trial Notification Scheme reduces the regulatory burden on clinical trial sponsors and enables quicker and more efficient trial initiation.

Under this Scheme, a Human Research Ethics Committee (HREC) reviews the proposed clinical trials documentation, assessing the trial design before providing approval. For public institutions this ethics approval may then be recognised across all Australian jurisdictions under Australia's National Mutual Acceptance system for ethics approvals, reducing timelines and costs.

Australian trial data can support submissions to international regulators, such as the US' Federal Drug Administration (FDA), including Investigational New Drug (IND) applications, as well as the European Union's European Medicine Agency (EMA).

Clinical trials in Australia

Australia's clinical trials sector is substantial:

- ranked 1st in the world for inititation of commercially sponsored clinical trials per capita
- ranked 3rd globally for total number of phase one clinical trials initiated
- more clinical trials activity (number of trials per capita) thank France, Germany, the United State and the United Kingdom[42]

Between 2006 and 2020:

- Australians participated in over 18,000 clinical trials
- total participation of 8.7 million people in clinical trials
- 69% of trials were only conducted in Australia[43]

The sector has also showed resilience in recovering from the impact of the COVID-19 pandemic. By 2022, initiations of new clinical trials had essentially returned to 2019 levels with 1,850 new clinical trials having commenced.[44]

Key statistics

Trials in Australia can commence in as little as

4-8

weeks

Early phase trials are up to

60%

cheaper to run in Australia than in the US

In 2022, there were

90,000

participants in clinical trials in Australia[45]

Around

1,850

clinical trials start each year

Over

18,000

trials registered in Australia from 2006 to 2020 with 40% of those in the period 2016-2020[46]

69%

of trials were only conducted in Australia

Figure 10 Percentage of Australian clinical trials registered by phase of study, 2015-2024 [47]

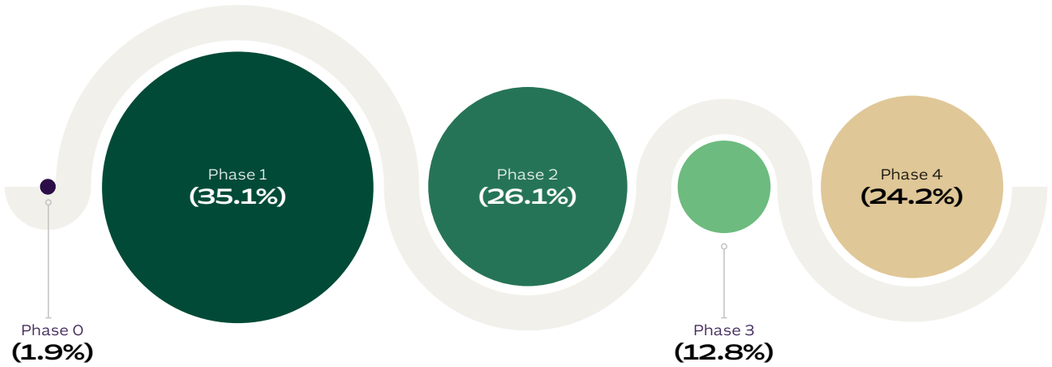
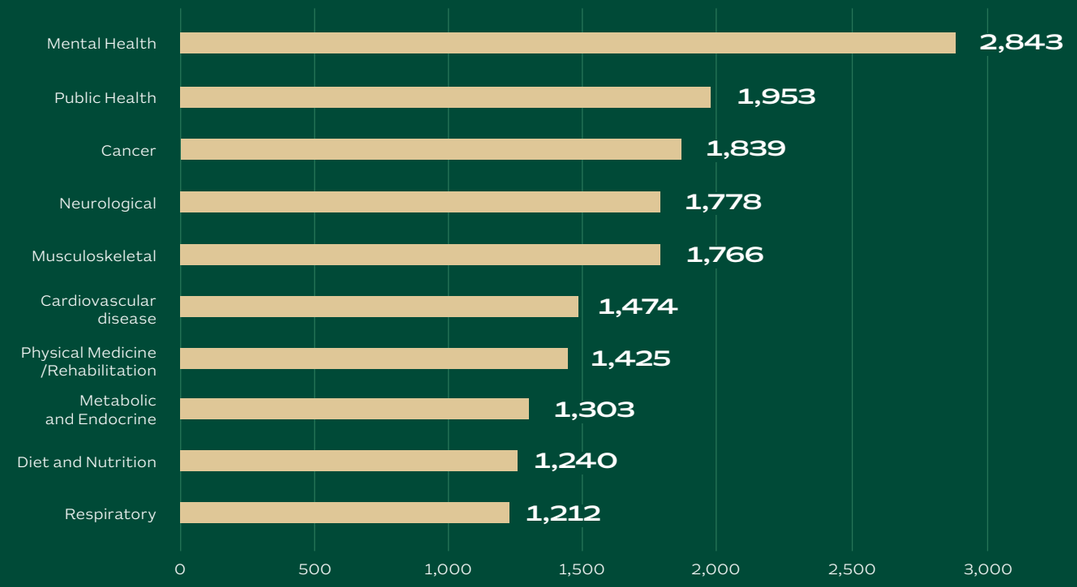
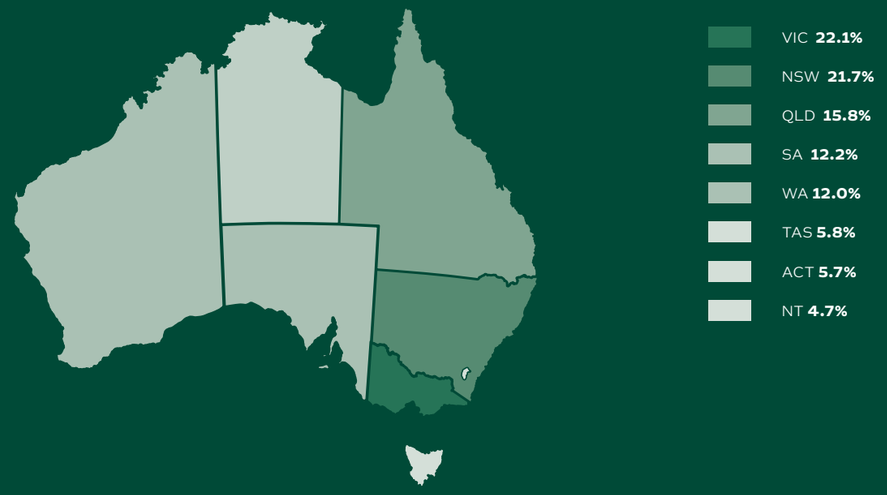


Figure 11 Registered Australian clinical trials by condition condition, 2015-2024[48]



Spread of clinical trials across Australian states

Figure 12 Australian clinical trials registered by state, as at 1 June 2025[49]



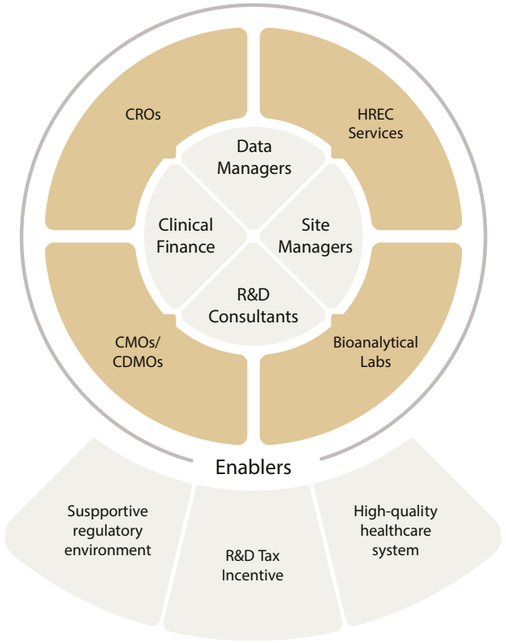
Supported by a thriving ecosystem

Australia is an attractive market for clinical trials offering cost-effective, efficient and high quality clinical trials via:

- A long-established network of Contract Research Organisations (CROs) provides end-to-end trial management services, including regulatory support, project oversight, data management and monitoring. Strong relationships with clinical sites and regulatory bodies mean that Australia's CROs can facilitate efficient trial setup and execution
- World class Contract Manufacturing Organisations and Contract Development and Manufacturing Organisations (CMO/CDMOs) provide services ranging from drug and process development, clinical and commercial manufacturing, drug importation capabilities, production, packaging and quality control and assurance
- Bioanalytical laboratories across Australia offer high-quality pharmacokinetic biomarker and immunogenicity biomarker analysis, and pharmacodynamic capabilities supporting trials from early- to late-phase. Accredited to international standards and equipped with advanced technologies, data accuracy and regulatory compliance are assured
- Providers of Human Research Ethics Committee (HREC) services offer independent ethics reviews for human research projects to ensure they are ethically acceptable and comply with relevant guidelines and legislation
- Australian data managers contribute extensive experience in clinical data collection, validation and statistical analysis to the ecosystem. Their knowledge and expertise underpins the integrity and quality of critical trial data with many trained in international Good Clinical Practice (GCP) with adherence to data systems and sets recognised by the US FDA and other major regulators, including CDISM, SEND, SDTM and ADaM
- Clinical finance professionals help navigate the complexities of budgeting and grant applications, ensuring that trials are cost-effective and meet compliance requirements
- Acting as a vital link between investigators, sponsors and CROs, site managers coordinate clinical activities at hospitals and research centres, ensuring that protocols are followed and patient recruitment targets are met
- Strategic advice and input from research and development consultants on regulatory pathways, trial design, ethics submissions and commercialisation can prove particularly valuable in early planning stages and for companies new to the Australian regulatory environment

Together, these professionals form a cohesive and experienced clinical trials ecosystem, underpinned by a supportive regulatory environment, government incentives such as the Research and Development Tax Incentive and a high-quality healthcare system. This collaborative approach coupled with quality infrastructure ensure trials in Australia are conducted efficiently, ethically and to the highest international standards.

Figure 13 An interconnected clinical trials ecosystem



South Australia Health and Medical Research Institute (SAHMRI), South Australia

Advanced clinical development and manufacturing capability

Why Australia

Australia has a vibrant medical manufacturing sector servicing national and international needs at each part of the value chain.

The Australian landscape includes both large and smaller manufacturers, ranging from local operators to global with Australian operations. The ecosystem includes a growing number of cGMP and GMP compliant contract development and manufacturing organisations (CDMOs) across the country. From product inception to market launch, these CDMOs deliver quality advice and support, guiding organisations through scale up and regulatory requirements.

The Therapeutic Goods Administration's website lists:

- 425 Australian pharmaceutical manufacturers
- 190 companies manufacturing medical devices[50]

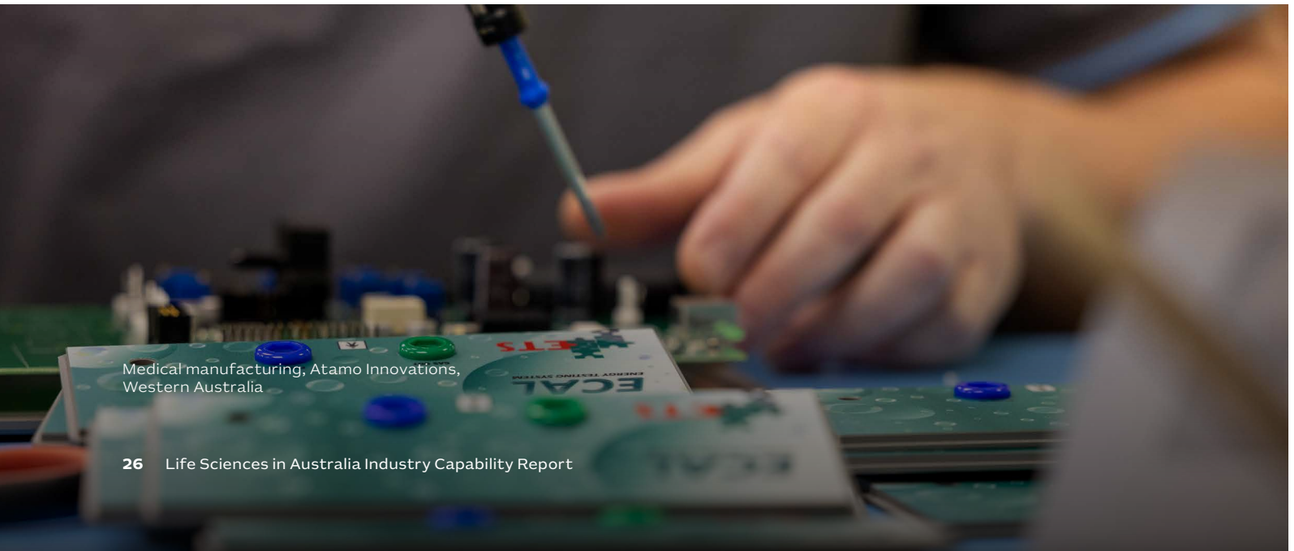
The domestic medical manufacturing sector possesses a high degree of expertise and agility while, at the same time, demonstrating strong compliances with Good Manufacturing Practice (GMP) and other global standards. Australia's medical manufacturing companies also have the capacity to provide and manufacture inputs to support other manufacturers' supply chains.

A strong medical manufacturing sector

Australia's manufacturing capability is underpinned and reinforced by other elements in the life sciences ecosystem such as our strong research and development, globally trusted regulatory processes administered by the TGA and skilled workforce.

Our medical manufacturing capability, including in areas such as synthetic biology and biological manufacturing, continues to grow. Recent activity includes:

- The New South Wales Government's investment of $134.5 million to establish the Viral Vector Manufacturing Facility to manufacture viral vector products for research and clinical trials and also the strategic collaboration between the NSW Government, RNA Australia and Myeloid Therapeutics to create Aurora Biosynthetics – a state-of-the-art RNA manufacturing partner providing comprehensive, end-to-end solutions for the production of critical drug components, including plasmid DNA, mRNA, and lipid nanoparticles
- The Queensland Government and Translational Research Institute's joint $100 million+ investment in ENTRI, a new scale-up multi-product biomedical cGMP cleanroom facility on demand for maturing, high-potential, medtech and biotech start-ups as well as recent announcements to support Southern RNA's establishment of a GMP-compliant Lipid Nanoparticle (LNP)-mRNA formulation platform at its Queensland facility
- Bridgewest's investment in two manufacturing sites in Australia to create leading CDMO BioCina. South Australian facilities now include process development and cGMP clinical and commercial manufacturing across microbial, plasmid DNA (pDNA), mRNA and lipid nanoparticle (LNP) modalities. In addition, facilities in Perth offer advanced sterile fill-finish capabilities, including Blow-Fill-Seal, cytotoxic and non-cytotoxic vial filling, pre-filled syringes and cartridges
- The continued investment by CSL with new plasma fractionation and vaccine manufacturing facilities opening in the last three years
- The partnership between Sanofi, The University of Queensland (UQ), Griffith University and the Queensland Government, including the development of systems and processes needed to make bulk drug product and fill & finish of mRNA vaccines in Australia
- Moderna's partnership with the Australian and Victorian Government to manufacture mRNA vaccines at the new world leading Clayton Campus in Melbourne
- An agreement between BioNTech and the Victorian Government for an mRNA facility to produce next generation mRNA vaccines and treatments for clinical trials as well as research-grade RNA materials[51]



Medical manufacturing, Atamo Innovations, Western Australia

Manufacturing future focus

To support the ongoing development of manufacturing in Australia's medical science sector, Australia's Medical Science Co-Investment Plan aims to ensure that more value is captured by continuing to increase domestic industrial capabilities and capacity. Particular areas for growth under the plan have been identified as:

Digital Health including the use of artificial intelligence, machine learning and other advanced technologies, advanced software solutions, and cyber security and health data collection solutions

Complex Therapeutics, including clinical trial infrastructure and capabilities, personalised medicines, and advanced research, development and manufacturing

Medical Devices including the use of advanced manufacturing capabilities for speciality areas, robotics, non-invasive medical devices including smart and connected devices, and therapeutic-grade materials and components

Sustainability, including additive manufacturing capabilities, circular economy principles, preventative healthcare and sustainable production

These areas focus on and leverage Australia's existing capabilities and expertise, supporting ongoing sector growth.

Development at NovaCina part of BioCina.

Case study

BioCina

BioCina is a leading global contract development and manufacturing organisation (CDMO) providing end-to-end solutions for biologics and small molecules development and GMP manufacturing.

Following a strategic merger with NovaCina in 2024 – a company that was previously Pfizer's Australian drug product site – BioCina now offers process development, formulation, full analytics and cGMP clinical and commercial manufacturing and are equipped to deliver across microbial, plasmid DNA (pDNA), mRNA and lipid nanoparticle (LNP) modalities in South Australia. BioCina's Perth facilities offer advanced sterile fill-finish capabilities, including Blow-Fill-Seal, cytotoxic and non-cytotoxic vial filling, and aseptic lines for biologics for pre-filled syringes and cartridges.

BioCina has built an elite team of technical and operational experts, and their sites are approved by the US FDA, PDMA Health Canada, EMA and TGA.

BioCina are committed to partnering with their clients and understand the journey and environment that clients are facing. Their commitment is on-time and in-full delivery (>97%) and their client-focused approach to partnering offers customised services and individual solutions.

BioCina's success is built on a 40+ year history. Spun out of the University of Adelaide as Bresagen in 1982, the original GMP facility in South Australia was built in 2003 and approved by the TGA the following year. Since then, the company has been part of Hospira and Pfizer before Bridgewest acquired the site in 2020. In 2021, BioCina established CDMO Bridgewest Australia Biotech dba BioCina.

As of 2025, BioCina is now a full end-to-end CDMO with an impeccable pedigree and quality, and operational and delivery track records second to none on the global market level. Beyond that, Australia has an amazing bio-ecosystem that offers up to a 48.5% tax incentive on drug development activities performed all the way to commercial manufacturing.

Having worked on more than 600 commercial products that have been shipped to over 100 countries, BioCina's expertise and track record positions them perfectly to work with organisations involved in drug development, bio-similar, generics and most of the new modalities that are in the market today.

Case study

Vaxxas

Vaxxas is focused on enhancing the performance of existing and next-generation vaccines with its proprietary high-density microarray patch (HD-MAP) with initial applications being targeting in infectious diseases and oncology.

Vaxxas' core technology was initially developed at The University of Queensland. The company was founded in 2011 with initial equity financing led by OneVentures' Innovation Fund I with co-investors Brandon Capital Partners and US-based HealthCare Ventures. Further financing followed, led by OneVentures and joined by The University of Queensland.

Vaxxas' needle-free technology is a small patch including thousands of microprojections, each coated with a small dose of vaccine. When applied to the skin, the patch delivers the vaccine directly to the immune cells below the surface, prompting an immune response comparable to needle and syringe delivery with less vaccine.

Vaccine delivery via Vaxxas' HD-MAP technology has the potential to overcome challenges faced by traditional delivery of vaccines. For example, in early clinical studies, the dried form of the vaccine on the patch has shown to be more stable at higher temperatures than vaccines in liquid formulations, potentially reducing the need for cold-chain storage and distribution[52] and extending the reach of vaccines to remote areas or regions where resources are constrained.

HD-MAP vaccines are also designed to be easier to administer, with the potential for self-administration in a public health emergency such as a pandemic response.[53] They are also less invasive and more patient-friendly than traditional needle-based injection.

Vaxxas has successfully completed five Phase I clinical trials with vaccines for COVID-19, seasonal influenza, and measles and rubella vaccine patches involving over 500 participants, and is completing a sixth Phase I clinical study for a pre-pandemic influenza.

The company credits its success to date on ensuring efficient transfer of the vaccine from the patch to the skin, offering an affordable delivery alternative and the strength of its partnerships with government, industry and academia.

Previously based at the Translational Research Institute (TRI) in Brisbane, Vaxxas benefited from access to TRI's clean rooms and other infrastructure, which supported its translation from pre-clinical to clinical studies.

Local Australian capability and know-how has also played an important role in the technology's development. For example, a small Wollongong-based company helped to develop the metal stamping needed for the device spring system, while a laser drilling expert in Murwillumbah also contributed critical capability.

In addition to this Australian industry backing, Vaxxas opened a 5,500 square-metre facility in 2023 with support from the Queensland Government in Brisbane's Northshore precinct. This state-of-the-art, custom-built facility will enable the company to manufacture its HD-MAP vaccines for Phase II and III clinical trials and first commercial products.

A biotech sector recognised for global success

Why Australia

Australia's local biotechnology industry has a long history of success and regularly ranks in the top 5 for biotech innovation.[54]

At the forefront of global medical research and innovation, the industry covers a range of players, from small pre-revenue start-ups to medium size enterprises in scale up phase and large commercial organisations with products sold both in Australia and globally.

Our biotechnology sector benefits from:

- Our position, relationships and investments in the Asia-Pacific region
- Australia's 19 Free Trade Agreements (FTA) and the intent to negotiate more
- Deep domestic understanding and history of strategic partnerships and joint ventures
- Strong translation capability between universities, medical research institutes and industry
- Access to the global supply chain in collaboration with Australian biotech companies
- Strong and experienced workforce
- Extensive linkages to world class infrastructure, health professionals and a stable, growing domestic ecosystem
- Strong domestic clinical trials ecosystem
- Growing clinical and full scale cGMP and GMP manufacturing capability

Modelling suggests that Australian biotechnology companies could generate over $15 billion (US$10 billion) in exports to the US in 2030.

Growing Australia's medical research and translation capabilities continues to be a priority for the Australian Government as indicated by its 2024 designation of biotechnologies as one of the seven Australian critical technologies.

Market snapshot

- 2.3% growth in market size in 2025[55]
- 2.4% compound annual growth (CAGR) 2020-2025[56]
- Estimated revenue of $12.3 billion in 2024-25, increasing to $14.9 billion in 2029-30[57]
- In the five years to 2023, Australian biotechnologies received $933 million in foreign investment[58]
- Biotech market capitalisation grew by $82 billion from 2019-2023[59]
- Workforce in biotechnology increased 51% from 2008-2022[60]
- 105,000 employees[61]

Australian biotechnology in action

Australia's biotechnology companies are thriving across an array of therapeutic areas and targeting some of the world most challenging diseases. As the Australian sector has matured, Australia's biotechnology companies are increasingly taking therapies from research and translation through to development, commercialisation and manufacturing on shore and exporting to global markets.

A few of Australia's current biotechnology company success stories include:

- Neuren Pharmaceuticals: New therapies for highly debilitating neurodevelopmental disorders. Neuren's deep expertise in neurodevelopmental disorder therapy has been accumulated over years of clinical development. Acadia Pharmaceuticals now holds a worldwide exclusive licence from Neuren for their first product
- BiomeBank: Treating and preventing disease by restoring gut microbial ecology. BiomeBank has the first microbiome-based therapy to be approved as a biological in the world. Manufactured in a purpose built Australian GMP facility, following rigorous and quality-controlled screening, and manufacturing processes, it is currently supplied to hospitals and clinics throughout Australia
- MicroBio: Leading the paradigm shift in pathogen identification. MicroBio is dedicated to making a difference in the battle to stop pathogens. Their flagship product sepsis pathogen identification blood test has been researched and developed, and is now manufactured in Australia with distribution agreements in place across multiple markets in Asia and Europe

Innovative products delivered in partnership

Below are just a few of the many innovative health products founded in Australia and delivered in partnership:

- Gardasil® – a vaccine to prevent the causes of cervical cancer – initial patent filed by the University of Queensland's commercialisation company in 1991 for the immunogenic VLP technology that could be used to develop an HPV vaccine. Research continued until 1994, when intellectual property was licensed to Australian biotechnology company, CSL Limited, which funded further research and development of an HPV vaccine. In 1996, CSL sub-licensed the technology to American multinational pharmaceutical company Merck & Co., Inc., known as Merck Sharp & Dohme (MSD) in Australia, while retaining the rights to market HPV technology within Australia and New Zealand
- RECELL® – spray on skin – initial work on the science that eventually led to the development of RECELL® was undertaken at the Western Australia Skin Culture Laboratory in Perth and the IP transferred numerous times before finally being successfully commercialised by Avita Medical
- Tafenoquine (Krintafel/Arakoda) – for the prevention and treatment of malaria, specifically for plasmodium – which resulted from a collaboration between the US Army and Australian researchers and was approved by the FDA in 2018
- Venetoclax is the result of a research collaboration between Melbourne's Walter and Eliza Hall Institute and companies Genentech, a member of the Roche Group, and AbbVie. This breakthough anti-cancer drug was based on a landmark research discovery made at the Walter and Eliza Hall Institute in the late 1980s, that a protein called BCL-2 helps cancer cells survive indefinitely
- Momelotinib (Ojjaara) – used to treat adults with certain types of myelofibrosis who have anaemia - developed as candidate CYT387 at Cytopia, an Australian biotech company founded in 1999 by Professor Andrew Wilks and approved by the FDA in 2023

Case study

ortho·cell

Orthocell

Orthocell develops and manufactures world-leading regenerative medicine products to unlock the power of the human body to heal – restoring mobility, function and performance. Orthocell's origins lay in the meeting of bright, solutions-focused minds over 15 years ago, who saw the potential for biological solutions to repair the human body in applications traditionally dominated by materials like metal and plastic.

Regenerative medicine (RM) leverages the body's ability for self-repair to reduce pain and return function. RM treatments use 'biological substitutes' to repair damaged or diseased tissues. The biological substitutes can be cell-based, where healthy cells are injected into diseased or damaged tissue to repair the damage; resorbable implanted collagen medical devices that encourage new tissue formation using the body's own intrinsic repair processes; or a combination of cells and collagen medical device, where cells are seeded onto the medical device, which is then implanted into the repair site.

Orthocell manufactures both collagen medical devices and cell-based therapies. Their products are used by surgeons to treat musculoskeletal injuries of nerve, tendon and cartilage and dental bone defects.

Orthocell was initially supported by venture capital funding from a Western Australian-based VC firm and various commercialisation and infrastructure grants, together with non-diluted funding from the State Government to fund building of laboratory space and clean rooms, as well as their initial clinical trial programs. Orthocell was listed on the Australian Securities Exchange (ASX) in 2014. In 2023, Orthocell upgraded the manufacturing facility to increase manufacturing capacity from 10,000 units to over 100,000 units per annum.

The expansion in manufacturing has been accompanied by growth in talent at Orthocell. From CEO Paul Anderson initially being the only employee, Orthocell has grown to around 55 staff across all facets of medtech, including regulatory affairs, quality, sales and marketing, manufacturing and supply chain, and adds 5-6 new staff every year as they grow their manufacturing capacity and capability.

Remplir™ - regenerative medicine products in action

Orthocell's collagen nerve wrap Remplir is used in the repair of peripheral nerve injuries. It assists in re-joining severed or severely damaged peripheral nerves to restore movement and sensation. Remplir provides compression-free protection to the nerve and an ideal microenvironment to aid nerve healing. Remplir also reduces the need for sutures to join nerves together, which themselves can compromise nerve healing. Remplir is manufactured using a proprietary SMRT™ manufacturing process to preserve the collagen structure and optimise tissue integration.

Case study

ide.group

IDE.Group

IDE Group is a leading development and commercialisation partner whose goal is to deliver meaningful innovations to healthcare. Bringing together expertise in industrial design, electronic, mechanical and software engineering, business development, regulatory affairs, quality management, manufacturing, science and research to help commercialise products with impact. Supporting organisations to take their products from the initial steps to full market, IDE works at the nexus of product viability, feasibility and desirability. IDE provides full range of services as well as developing its own technology and products.

Since 2003, IDE has grown over 150 medical technology businesses and realised over 500 projects. It has created over 50 approved medical products and been integrally involved in over 85 successful patent applications. IDE supplies products through its manufacturing facilities in Sydney and global supply chain.

In business for nearly 25 years, IDE has grown to nearly 70 staff. Headquartered in Sydney and with staff and facilities in the US and Rotterdam, IDE Group works with start-ups, both private and at universities, through to large multinationals to help them develop and launch products into markets across the globe.

Atomo Diagnostics Rapid HIV Test

Atomo Diagnostics, working with IDE Group, had identified issues with the misuse of common lateral flow based, point of care (POC) diagnostics that were leading to misdiagnosis of serious medical conditions. They believed this could be improved and set out to change the way lateral flow POC diagnostics were used. This included the observation that usability, convenience and simplicity of use could make a real difference in diagnostics. This is because, when people can't use a product the way it is intended, its performance is undermined.

This was the case in HIV tests where, despite significant investments in optimising the lab sensitivity and specificity, 1 in 3 HIV positive patients tested negative at local African clinics.

In-field testing demonstrated that the approach taken by previous point of care tests allowed for numerous usability errors.

Working with patients, clinicians and everyone involved in the pathology process, IDE helped develop a new test by to address usability issues and improve how blood was taken and diagnostics performed.

Clever design was not going to be enough to keep the costs of goods for the new test viable, so a new production process and supply chain was also developed to deliver the product to market.

Today Atomo Diagnostics has a presence in Australia, Europe and Africa, selling products not only in the developing world, but also the developed world, through a growing portfolio of products.

Revolutionising ophthalmic injections – introducing OKO™

Currently intraviteal injections, essential for treating retinal diseases such as diabetic retinopathy, utilise devices originally intended for entirely different medical applications. This mismatch leads to dosing inaccuracies, procedural inefficiencies and risks to patient safety.

OKO, a revolutionary ophthalmic auto-injector announced by IDE Group in 2025, has been developed through extensive collaboration with ophthalmologists in Australia, the US and Europe, highlighting IDE Group's commitment to clinician-driven innovation. In this regard, based on internal testing, data and analysis to date, OKO provides up to 59 times greater dosing accuracy compared to prefilled syringes, reduces procedural steps by 45% and significantly enhances the efficiency of patient treatment, simultaneously cutting costs by up to 78% per injection.

Early feedback from ophthalmologists has been overwhelmingly positive with 90% preferring OKO over conventional prefilled syringes. IDE Group is actively preparing OKO for market entry through strategic partnerships and comprehensive clinical validation, ensuring seamless integration into existing pharmaceutical and clinical workflows.

A history of world leading medtech innovation

Why Australia

Australia is a recognised world leader in medtech through companies such as ResMed, Cochlear, Nanosonics and Qlicksmart among others. Australia has a proven track record:

- World-leading innovation in medtech from devices to diagnostics
- A fast-adopter of artificial intelligence (AI) and adaptive technology platforms

This enables innovators, partners and exporters to have wide-reaching, global impacts on patient care.

Active in the research, development and manufacture of medical devices and diagnostics, and including, companies operating in Australia benefit from:

- A reduced time to market
- Our highly skilled and collaborative workforce
- Australia's strategic geographic position in the Asia-Pacific region

Market snapshot

8th globally ranked in total market value and 3rd largest medical device market in APAC[62]

A$10.5bn total medtech, devices and diagnostics market value in 2025 (estimated)[63]

901 medtech companies in Australia, increased from 325 in 2017

Ranked 2nd globally in number of medtech patents produced[64]

A$5.3bn value of medtech, devices and diagnostics exports[65] growing at 19.7% annually

7% CAGR through to 2028 with projected total market size of $12.8bn in 2028[78]

Medical researchers, Peter MacCallum Institute, Victoria

Australian medical technologies, devices and diagnostics in action

Australian medtech, devices and diagnostics companies are flourishing across diverse medical technology sectors and in global markets, including in areas such as cardiac, diagnostic, neurology and women's health.

Australian exporters are also meeting increasingly sophisticated healthcare demands with innovative technology solutions:

Annalise.ai: AI-powered diagnostic support and workflow solutions. Comprehensive radiology AI solutions that can identify over 120 findings in chest X-rays and 130 in head CT images, increasing efficiency, and reducing image reading times, with results available in under two minutes

Fusetec: advanced medical training devices. Advanced manufacturing, specialised in anatomically accurate surgical training models, adjunct to and replacement for cadavers and wet specimens

Cellabs: immunodiagnostic kits for tropical and infectious diseases. Specifically targeting diseases afflicting millions of people worldwide and one of the first companies to provide diagnostics for malaria, cryptosporidiosis, giardiasis, and chlamydial diseases

Clever Culture Systems: AI and automation for pharmaceutical and clinical use. Automated culture plate processing machines that can read, interpret, sort and validate results at 3x the speed of manual handling, 200 plates per hour

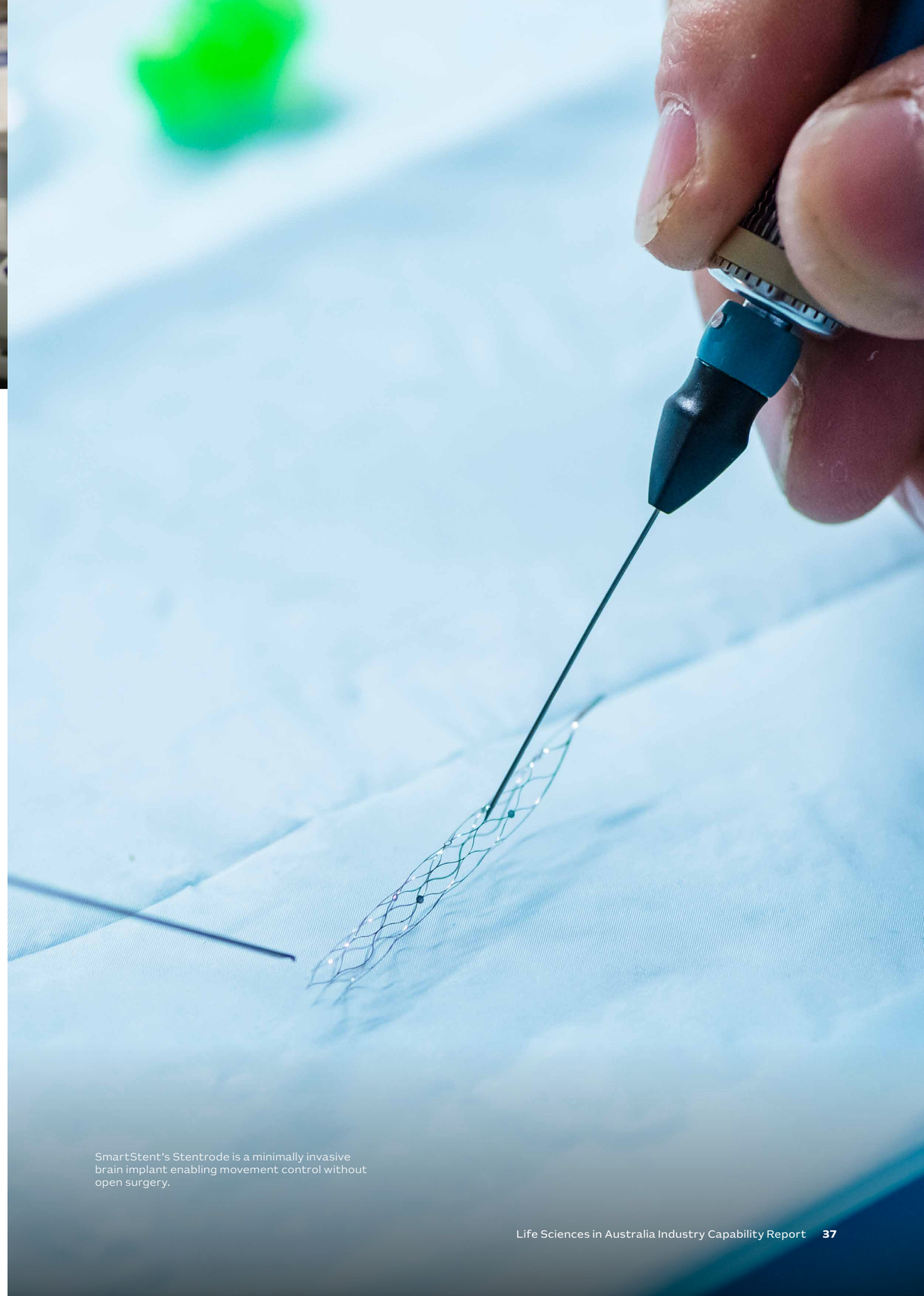
Other firms changing the industry across technology solutions include:

Navbit: Specialising in the use of emerging high-performance sensor technologies including Navbit Sprint, a disposable and affordable hip navigation device for surgery

Additive Surgical: the first company in Australia to manufacture Off-The-Shelf 3D Printed Titanium spinal implant technologies, using state of the art European IP. Now established a true end-to-end medical device ideation to full commercialisation facility, embracing the principals of Clinician Centric Design and Advanced Biomimicry.

4D Medical: Four-dimensional lung imaging technology for diagnosis, analysis and treatment

23Strands: Whole genome sequencing and AI for fertility and other areas



SmartStent's Stentrode is a minimally invasive brain implant enabling movement control without open surgery.

Case study

Medtronic and IMRA

In 2022, Medtronic entered the soft-tissue surgical robot market in Australia when its Hugo system was approved by the Therapeutic Goods Administration. As a global leader in medical technology, with a mission to alleviate pain, restore health and extend life, Medtronic partnered with The International Medical Robotics Academy (IMRA Surgical) to provide surgeons with best-in-class training in robotic-assisted surgery (RAS).

RAS has been identified as an emerging medical technology with the potential to help standardise surgical procedures and enable minimally invasive surgery. Clinical benefits of RAS depend on the surgical application of the technology. For example, applied in certain soft tissue procedures, benefits include fewer complications, shorter hospital stays, faster return to normal activities and smaller scars compared to open surgery.[67]

Formally established in 2021 and headquartered in Victoria, IMRA Surgical has developed a unique robotic surgery education program to educate and upskill surgeons in preparation for the operating theatre of the future, working with all surgical robotic platforms approved in Australia.

This partnership has enabled Medtronic to collaborate with a network of experts to enhance the knowledge and skillset in RAS. This involved training clinicians from across Australia and around the world at IMRA's Melbourne Training Facility.

In addition, and as part of its focus on optimising training for robotic surgery, IMRA Surgical has pioneered the development of synthetic organs, using a patent protected hydrogel formula, from its base in Victoria and now ships to 10 countries.

Synthetic training tools reduce and then eliminate the need for cadavers and animals in training through the utilisation of lifelike synthetic organs that can be created on demand to simulate both normal and diseased conditions. In addition, synthetic organ models can be used in the operating theatres around the World which enables surgeons to train where they are and not take valuable time away from clinical practice.

Medtronic initially utilised these hydrogel models for training on the Hugo system in Australia but has now extended this training across the world. This in turn has enabled IMRA's Victorian based manufacturing to expand.

The partnership between Medtronic and IMRA has provided a global audience for Australia's R&D capacity as clinicians around the world use IMRA's technology while experiencing the Hugo system. Collaborating within the Australian ecosystem a truly innovative, and global partnership has been created, one focused on achieving patient outcomes through optimal surgeon training while also enabling local manufacturing to have global reach.

A future focused government agenda to grow national strategic capability

In addition to Australia's significant growth and outstanding national capabilities in life sciences, it has a number of other advantages including its geographic location in the Asia-Pacific and proximity to tropical areas, position in the Southern Hemisphere for complementary disease monitoring to Northern Hemisphere data, diverse population and more. These advantages mean Australia is uniquely positioned to contribute to emerging global health challenges.

Australia has prioritised a range of critical technology fields that complement the nation's existing research, intellectual and industrial strengths and are important for future strategic capability.

These include Australia's *List of Critical Technologies in the National Interest.* This list identifies a range of key enabling technology fields that will deliver to Australia's future including technologies in which Australia has existing research, intellectual or industrial strengths and capabilities; that require uninterrupted access through trusted supply chains; and where Australia must retain strategic capability.

Within biotechnologies, the Australian Government identifies the following as examples:

- Synthetic biology, including biological manufacturing
- Neural engineering and brain-computer interfaces
- Genome and genetic sequencing and analysis
- Vaccines and countermeasures
- Novel medicines, including nuclear, antiviral and antibiotic

Australian industry is making strong contributions to important future capabilities and technologies, including in vaccines, cell and gene therapies, radiopharmaceuticals and neural engineering, including brain-computer interfaces.

Vaccines

Australia has a long history of vaccine development.The Australian Government's early recognition of the need for local vaccine development and manufacture generated an early expertise and capability through the creation of the then Commonwealth Serum Laboratories, now CSL.

In addition to this, our location in the Southern Hemisphere coupled with a strong supportive health system and proximity to the Asia-Pacific positions us perfectly to support the development of seasonal vaccines, a fact recognised and reflected in recent investments in vaccine research, development and manufacture.

Moderna opened the Moderna Technology Centre Melbourne (MTC-M) in 2024, the company's first end-to-end mRNA manufacturing facility with a peak capacity of 100 million doses of vaccines. It has also established the Regional Research Centre – Respiratory Medicine and Tropical Diseases in Melbourne recognising that infectious and tropical diseases hold significant importance in Australia and our surrounding region due to their potential to impact public health, economies, and overall well-being.

Sanofi has partnered with the University of Queensland (UQ), Griffith University and the Queensland Government and, in 2023, created the Translational Science Hub in Brisbane, Queensland. Focused on developing new vaccines, the Translational Science Hub connecting world class researchers in Queensland with Sanofi scientists in France and the US.

Cell and gene therapies

Cell and gene therapies and products can address the root cause of diseases and deliver long-lasting, life-changing results for patients with cancer and rare diseases.

Australia is well positioned to be a leader in cell and gene manufacturing given our long standing expertise in genome and genetic sequencing and analysis. Initiatives like the Solutions for Manufacturing Advanced Regenerative Therapies (SMART) Cooperative Research Centre (CRC) bring together Australian and multinational biotechnology and pharmaceutical companies with the nation's preeminent scientists, engineers and clinical researchers from our world-leading universities and medical research institutes.

The growth of the sector can also be seen with:

- Cell Therapies' cell and gene therapy GMP facility manufactures CAR T-cells and other 'living' cancer at commercial scale. In 2023, the expansion of their Melbourne-based facility increased capacity to support high throughput manufacture of clinical trial and commercial cell and gene therapy products for Australian patients and the Asia-Pacific market
- The Viral Vector Manufacturing Facility at Westmead in NSW is the first commercial manufacturing facility of its kind in Australia and is pioneering the research, development and manufacturing of high-quality, clinical and commercial grade viral vectors
- Aurora Biosynthetics delivers fully-integrated, end-to-end RNA manufacturing solutions for the production of critical drug components, including plasmid DNA, mRNA and lipid nanoparticles (LNPs). Based in Sydney and integrating process and analytical development, GMP manufacturing and fill/finish services, Aurora's streamlined approach enables biotechnology and pharmaceutical companies worldwide to rapidly advance their innovative RNA-based therapies

With ongoing investments like these, it is clear that the Australia's expertise and capacity for ongoing growth is recognised. Australia is strategically positioned to become a regional hub for cell and gene therapy research and clinical trials in the Asia-Pacific region.

Radiopharmaceuticals

Australia's radiopharmaceutical sector is growing and will continue to expand with the global radiopharmaceuticals market growing 10% p.a.[68]

Australia's expertise in this area is well established in both cyclotron produced and nuclear reactor produced radioisotopes. Australia is home to the OPAL multipurpose reactor and associated export-scale nuclear medicine facilities at the Australian Nuclear Science and Technology Organisation (ANSTO) – an agency of the Australian Government.

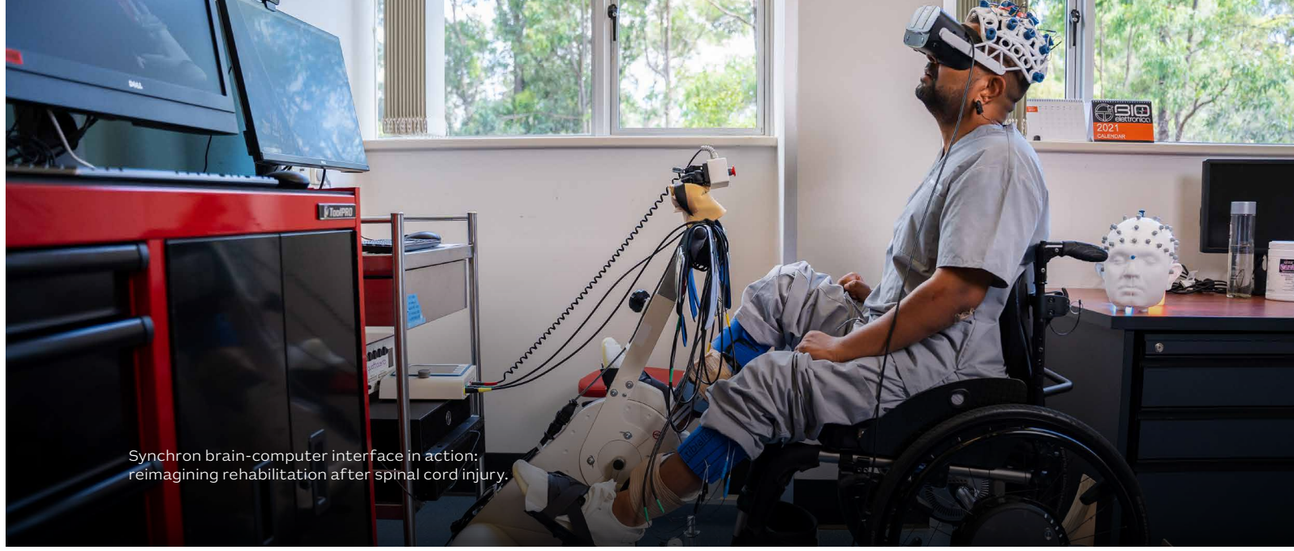
There are a number of radiopharmaceutical companies, including Telix, Clarity Pharmaceuticals and Advancell, active and expanding over numerous years. These Australian companies, along with a number of smaller and newer companies, are developing groundbreaking technologies and processes for producing isotopes.

There are also a number of CDMOs active in supplying isotopes, including Quantum Radiopharma, Cyclotek Radiopharma, GMS Australia and Cyclowest. These companies all have cyclotrons for isotope production and undertake radiolabelling for most clinical trials.

In addition, Australia has a number of CDMOs based at key institutions that manufacture and supply isotopes, including:

- The Australian Nuclear Science and Technology Organisation (ANSTO)
- The Molecular Imaging and Therapy Research Unit (MITRU) at the South Australian Health and Medical Research Institute
- The Australian Institute for Bioengineering and Nanotechnology (AIBN) at the University of Queensland

Strong partnerships have been key to Australia's success in this sector. Australia's first GMP (Good Manufacturing Practice) theranostics facility in Melbourne was created from a joint venture between the ANSTO and Cyclotek to form Applied Molecular Therapies Pty Ltd, a CDMO that is manufacturing the next generation of therapeutic radiopharmaceuticals for cancer treatment.



Synchron brain-computer interface in action: reimagining rehabilitation after spinal cord injury.

Academia and industry have been brought together at the Australian Research Council Research Hub for Advanced Manufacture for Targeted Radiopharmaceuticals (AMTAR). Bringing expertise across the radiopharmaceutical supply chain from both academia and industry together to develop new bioengineering processes and analytical tools, AMTAR is one of the many organisations cementing Australia's reputation as a world leader in the field of radiopharmaceutical manufacture and innovation.

Neural engineering, including brain-computer interfaces

The Australian brain-computer interface (BCI) market is on a strong growth trajectory. Generating revenue of US$54.7 million in 2024, it is forecast to grow to US$157.9 million by 2030, a compound annual growth rate (CAGR) of about 19.6%.[69]

Non-invasive BCIs currently account for the largest share of revenue while invasive BCIs are projected to grow the fastest in coming years.

A number of organisations are active and growing in BCI, including:

- Synchron – developed in Melbourne, Synchron's minimally invasive Stentrode™ BCI aims to restore the control of a touchscreen for patients with limited hand mobility using only their thoughts. With collaborations with technology giants like Apple, Synchron has reached over US$1 billion valuation and implanted devices in at least 10 patients[82]
- Syncron received NRFC funding in their Series D to bring development back to Australia. There have previously been discussions between Syncron and BioSpine on a potential collaboration, also with world-leading interventional neuroradiologists Dr Hal Rice and Dr Laetitia de Villiers regarding a trial involving the Stentrode being implanted into brain blood vessels. Dr Rice and Dr de Villiers established an image-guided surgery and robotics training centre, in partnership with Philips, which replicates a state-of-the-art neurovascular suite and is used for training Australian and overseas specialists in new minimally invasive procedures with the big device companies, as well as R&D. They are also pioneering robotics for brain aneurysms and stroke several companies - Gold Coast University Hospital was only the second site in the world for the first neurovascular robot and they have the largest caseload of robotic brain aneurysm procedures.
- BrainConnect Pty Ltd – established in 2020 in Sydney, BrainConnect focuses on developing subcutaneous, long-term brain-machine interfaces
- BrainChip Holdings Ltd – based in Sydney and listed on the ASX, BrainChip is the world's first commercial producer of neuromorphic IP. Like the brain, Akida™ - a neural processor platform - processes sound, vision and sensing data locally and efficiently

Case study

Moderna

In 2024 Moderna opened the Moderna Technology Centre Melbourne (MTC-M), its first end-to-end mRNA manufacturing facility and the first of its kind in Australia and the Southern Hemisphere. Underpinned by a long term partnership with the Commonwealth of Australia and the State of Victoria, the Centre strengthens the nation's sovereign mRNA capability, providing onshore vaccine manufacturing and materially enhancing Australia's mRNA research, workforce and supply-chain ecosystem.

The ten-year partnership is built on three pillars:

- Manufacturing. With a peak capacity of 100 million doses during a pandemic, the MTC-M establishes onshore production of seasonal respiratory and pandemic vaccines. Subject to regulatory approval, seasonal supply is planned for 2025.
- Research and development. Through the Regional Research Centre for Respiratory Medicine and Tropical Diseases, Moderna is investing in Australia's mRNA research ecosystem. Some of the key initiatives include:
  - the Monash–Moderna Quantitative Pharmacology Accelerator, a five-year programme that uses quantitative pharmacology to refine processes, clinical trials and human vaccine responses
  - the mRNA Platform Incubator Network, which supports scientific excellence in clinical translation
  - the Moderna Australian Fellowship Programme, which funds projects—currently focused on artificial intelligence, quantum computing for optimised mRNA design and social sciences—with up to A$250 000 per year for two years.
- Workforce and supply chain. Moderna is committed to strengthening local capability across mRNA research, development, manufacturing and commercialisation, while supporting national and international supply-chain partners. During construction of the MTC-M, 350 workers were employed on site at peak, and about 80 per cent of materials were sourced or manufactured in Australia.

Melbourne was chosen for the MTC-M and the Regional Research Centre because of its established life-sciences ecosystem, Australia's robust regulatory framework and the presence of mRNA Victoria—a dedicated government agency that provided a single point of contact and demonstrated Victoria's commitment to mRNA technology.

This partnership is central to Moderna's global success. Founded in 2010 and headquartered in Boston, the company has around 40 mRNA products in development and a success rate that exceeds the industry average. Collaboration with Australia therefore offers a unique opportunity to expand sovereign manufacturing and research capability while addressing unmet medical needs.

Case study

Telix

Telix Pharmaceuticals is a global, commercial-stage biopharmaceutical company focused on the development and commercialisation of therapeutic and diagnostic radiopharmaceuticals and associated technologies. Their focus is on oncology, especially prostate, kidney and bladder cancers, glioma, sarcoma and haematological oncology, and their pipeline is underpinned by a strong global supply, manufacturing and distribution network.

Telix has received global regulatory approvals in Australia, Brazil, Canada, France, Germany, the United Kingdom, the United States and a number of other European Economic Area members for its prostate cancer imaging agent and has more than 30 clinical trials underway worldwide.

Telix utilises the power of targeted radiopharmaceuticals to diagnose, treat, and manage cancers and rare diseases.

Many existing therapies for cancer and rare diseases are non-selective and, while treating disease, can also act against healthy tissue and vital organs. Existing external beam radiation therapy (EBRT) approaches are effective but are limited to delivering localised treatment and cause damage to surrounding tissue. Localised therapeutic approaches rely on the treating physician making assumptions about the extent of disease and can result in imprecise application of treatment. Treatments that miss small amounts of affected cells can lead to a recurrence of the cancer or disease.

Telix's radiopharmaceuticals are designed to deliver focused doses of radiation with precision targeting via systemic injection, regardless of where the cancer or disease is in the body. They do this by attaching a radioactive isotope ('payload') to a targeting agent, such as a small molecule or antibody, which has an affinity for the biomarkers found on the surface of cancerous or diseased cells.

The drug is delivered intravenously and seeks out cancerous or diseased cells wherever they are in the body, including small metastases where the cancer may have spread. It then binds only to those cells, concentrating radiation at the tumour sites and limiting off-target tissue exposure. This is different from traditional radiation therapy, which is typically only delivered to where an identified tumour is located.

Importantly, Telix pairs each therapeutic with a diagnostic imaging agent. This underpins the "theranostic" approach where two conjugates are used to target the same receptor on the cancer cell – one for detection, localisation and/or staging and the other for selective destruction of target cancer cells. Used in tandem, these help plan and deliver treatment while also enabling the response as well as any progression of the disease to be monitored. This pairing of being able see and diagnose a tumour and being able to treat it sets apart the "theranostics" that Telix develops. Their "See it, Treat it" philosophy and approach helps deliver a highly targeted, patient-centric and optimally personalised approach.

Telix's Illuccix®, for example, is a commercial imaging agent which binds to prostate-specific membrane antigen (PSMA), a protein often overexpressed in prostate cancer cells. Used with PET and CT scans, it shows the location and extent of a patient's prostate cancer, allowing doctors to determine whether a patient is a candidate for PSMA-targeted therapy and to assess the recurrence or spread of their cancer.

Once Illuccix®, has located prostate cancer based on PSMA expression, a therapeutic agent attracted to the same cancer target but with a more potent radioisotope attached can be sent in to destroy the cancerours cells. Telix's TLX591 therapy candidate is a first-in-class radio antibody-drug conjugate, currently being investigated for this application in the Phase 3 ProstACT Global trial, which is dosing patients in the United States and Australia.

As a result, Telix stands at the forefront of a growing recognition that radiopharmaceuticals are playing a major role in the delivery of cancer care.

A national network of life science expertise enabling research, translation, development and commercialisation

Australia's thriving life sciences industry is represented across all of our states and territories, including large and small biotech and healthcare companies, research institutions, hospitals, other health and medical entities, and universities.

Australia's states and territories work collaboratively together, cooperating to ensure that investors and those partnering with Australian companies and organisations have the best possible experience.

Leveraging each state and territory's unique attributes, Australia continues to build and expand our deep capabilities at state, territory and national levels to remain a leader in life sciences as well as maintain and expand our strong international partnerships and trade relationships.

Precincts and hubs

At the state and territory level, Australia's deep expertise is often brought together in health, medical and innovation precincts.

Precincts serve as hubs for research and development, clinical and other healthcare services and education. Attracting a wide range of stakeholders, including researchers, healthcare practitioners and industry partners, they foster innovation and collaboration as well as driving improved health outcomes.

Australia's states and territories are home to numerous healthcare precincts and innovation hubs representing significant expertise and capability across the nation.

To find out more about Australia's states and territories, please see Austrade's addendum report: Life Sciences in Australia, Australia's States and Territories.

Queensland

- Gold Coast Health and Knowledge Precinct
- Herston Health Precinct
- BioPark Australia (at Springfield)
- Sunshine Coast Precinct/Centre for Innovation
- TropiQ – Townsville Tropical Intelligence and Health Precinct
- Translational Manufacturing@TRI (opening 2026)
- Boggo Road Innovation Precinct

Regional NSW

- John Hunter Health and Innovation Precinct
- Wollongong Health Precinct
- Murrumbidgee Health and Innovation Precinct

Western Australia

- University of Western Australia (UWA) QEII Precinct
- Murray St Launchpad and Royal Perth Hospital Innovation Hub
- Bentley Technology Park
- Murdoch Health and Knowledge Precinct
- Joondalup Health Campus
- Biomedical Manufacturing Hub in Floreat

South Australia

- Adelaide BioMed City
- Lot Fourteen Innovation District
- Tonsley Innovation District

Victoria

- Melbourne Biomedical Precinct
- Monash Technology Precinct
- Latrobe Precinct
- Wantirna Health Precinct (emerging)

Sydney

- Sydney Innovation Precinct for Health Education and Research
- Macquarie Park Innovation District
- Liverpool Innovation Precinct
- Randwick Health and Innovation Hub
- Sydney North HealthCARE Innovation Precinct
- St Vincent's Sydney Health Innovation Precinct
- Westmead Health & Innovation Precinct

Government and industry life sciences partnership

The Australian Government and Australian life sciences industry work in partnership to drive innovation, global competitiveness and positive health outcomes. By aligning policy, trade and investment frameworks with industry expertise, Government and industry work hand-in-hand to grow Australia's biotechnology, medtech and pharmaceutical capabilities.

Recent collaborations include the AusBiotech and Austrade TradeStart partnership, which embeds a dedicated Head of Global Trade and Partnerships within AusBiotech, as the peak industry body, to help companies expand their export potential. Similarly, the Australian Government's Industry Growth Program sees AusBiotech and other organisations including MTPConnect guiding biotech and medtech SMEs through commercialisation and scaling pathways.

The 2025/2026 Australian Clinical Trials initiative will promote Australia's world-class research capabilities abroad; joint global trade missions coordinated by Austrade create opportunities for industry to build new global partnerships; and the Accessing New Markets program helps emerging health tech companies navigate export opportunities.

Together, these collaborations demonstrate how Government and industry unite around a shared vision, fostering innovation, accelerating commercial success and strengthening Australia's reputation as a global life sciences partner of choice.

Connect with Austrade

The Australian Trade and Investment Commission (Austrade) is Australia's national trade and investment promotion agency. We facilitate trade and attract foreign direct investment into Australia. Austrade connects global businesses to Australian opportunities, helping foreign investors and buyers do business with Australia. Austrade advisers can provide insight on Australian capability, alert you to latest products and technology from Australia and connect you with Australian companies.

Austrade partners the strengths of Australian businesses with the needs of international markets. We can open the door to a world of opportunities for your business.

Talk to your local Austrade representative for tailored advice and to partner with Australia.

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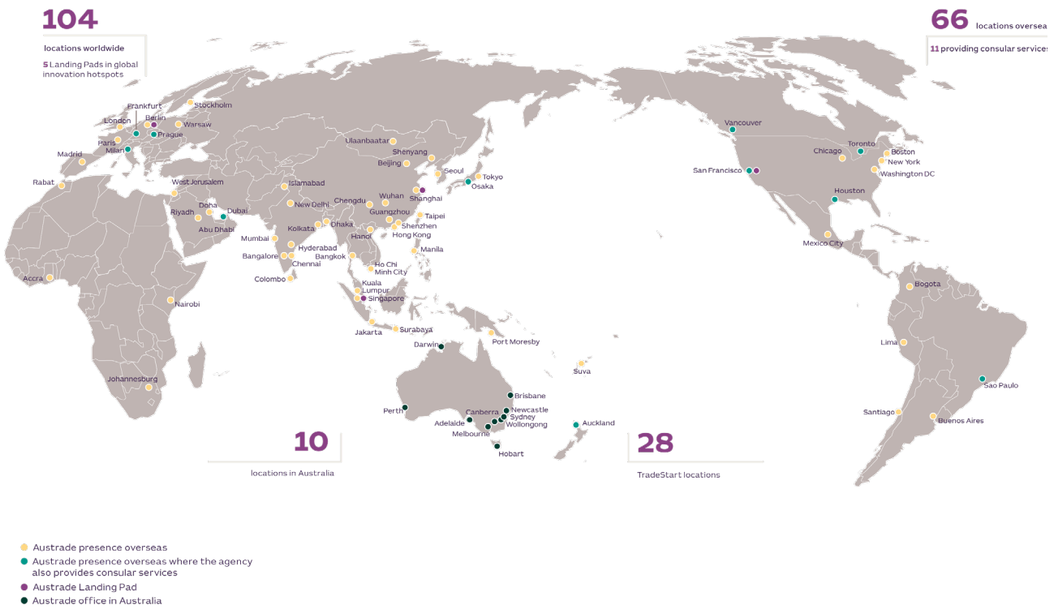

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This report has been prepared in collaboration with AusBiotech.

AusBiotech

AusBiotech is Australia’s life sciences peak body. For almost 40 years, we have worked to support the growth of our more than 3,000 members as they advance breakthroughs in medical science and develop new innovations to help solve some of Australia’s and the world’s most complex health challenges.

With our unrivalled membership breadth, representing all stages of the health innovation ecosystem, and drawing on our unique national convening power, we advocate for the advancement of Australian life sciences and our members’ success as they research, translate, develop and commercialise new health technologies, while supporting knowledge sharing and collaboration to help our life sciences innovators thrive.

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