Research, develop and grow in New South Wales, Australia

Spotlight on Clinical Trials and Advanced Therapeutics

NSW GOVERNMENT

Contents

Acknowledgement

NSW Government acknowledges the Traditional Custodians of the lands where we work and live.

We celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of NSW. We pay our respects to Elders past, present and emerging and acknowledge the Aboriginal and Torres Strait Islander people that contributed to the development of this resource.

Foreword from the Minister for Health and Regional Health

As the NSW Government's Minister for Health, I am committed to providing the people of NSW with a health system that delivers the outcomes that matter most to patients and the community. The state's life sciences sector is fundamental to ensuring future good health for the state, the community, and patients.

The standards of healthcare in New South Wales are among the best in the world. To deliver high quality, world class healthcare the NSW Government invests significantly in health and medical research. Advances in health and medical research provide patients with better treatments, and improve the delivery of health services. In addition to an annual NSW Health operating budget of over A$30 billion, we are bolstering research and development capabilities with:

- A$150 million to develop the Sydney Biomedical Accelerator,
- A$134.5 million to build one of the first GMP-grade clinical and commercial viral vector manufacturing facilities for the South-East Asia Pacific region, and
- A$95.8 million for an RNA (ribonucleic acid) research and pilot GMP manufacturing facility, along with A$119 million to support RNA research and development.

NSW is 5th in the world for biotech capabilities, in the top 10 destinations globally for clinical trials, and home to 55% of Australia's medtech and biotech companies. I welcome you to explore, partner and do business with our outstanding health and medical research sector.

This prospectus outlines NSW's strengths in health and medical research, and offers information to facilitate new international investment and partnering opportunities.

The Hon. Ryan John Park MP
Minister for Health
Minister for Regional Health

Foreword from the Minister for Medical Research

The NSW Government provides the state's health and medical research sector with ongoing and substantial investments that support our world-leading medical research experts, clinical trials infrastructure, and demonstrate our commitment to addressing emerging health challenges. By prioritising investment in health and medical research, we improve patient outcomes and contribute to the global healthcare community.

NSW has a medical research environment supported by expertise at universities, medical research institutes, health services, and in industry. These organisations collaborate and are connected to form a rich and innovative health and medical research ecosystem.

To strengthen this ecosystem, the state's Health and Innovation Precincts are strategically located concentrations of expertise in metropolitan and regional areas that specialise in clinical domains and facilitate translation from bench to bedside.

Driven by a collaborative approach that promotes multidisciplinary research, experts in NSW are pioneering precision and personalised solutions to global healthcare challenges. Our researchers boast global recognition for breakthroughs in cell and gene therapies, RNA, bacteriophage therapies, and vaccine development. We are also reducing research costs by providing greater efficiencies and reducing the need for animal testing with our growing expertise in using non-animal models to support drug development and medical research.

Our research intensive clinical environment, along with our specialist training programs, have supported local researchers to become leading experts in genomics and precision therapeutics, viral vector engineering, as well as oncology, neuroscience, cardiovascular medicine, infectious diseases, and medical devices. We have a thriving clinical trials sector with a single point of entry to the entire health system.

We also have a significant health innovation and development pipeline in NSW. Our state hosts 50 pharmaceutical companies, 400 biotechnology companies and 500 medical technology companies, more than 100 of which are listed on the Australian Stock Exchange. Australia has the twelfth largest pharmaceutical sales market in the world and the second largest in the Asia–Pacific.

Our concierge service will provide you with more information and connect you with the right partners in NSW. They can be contacted at medicalresearch.nsw.gov.au/contact-us

The Hon. David Harris MP
Minister for Medical Research

New South Wales, Australia: generating breakthroughs in healthcare

With Australia's largest population, strongest economy, and innovative life sciences sector, New South Wales (NSW) is home to an integrated, world-class health and medical research sector that is solving some of the world's most complex and burdensome healthcare challenges.

An economic powerhouse in the Asia-Pacific region

At almost 700 billion dollars, New South Wales is Australia's largest state economy, accounting for more than half of Australia's economic growth.

The NSW economy is larger than the individual economies of Singapore, Hong Kong and Malaysia, and the economic and political landscape is stable and secure, with a AAA (Fitch) Credit Rating.

Sydney: the gateway to Australia

NSW is home to Sydney, Australia's financial centre and gateway into Australia and the Asia-Pacific.

Sydney Airport has direct services to 98 destinations in 28 countries and services 10 leading freight carriers. There are more than 70 public airports in regional NSW and the new Western Sydney Aerotropolis, operational in 2026, will increase services and airfreight capacity.

More than 600 multinational companies have their regional headquarters in Sydney, and many of Australia's largest venture capital firms are headquartered here.

Sydney's time zone is global, as it spans from North America late afternoon to Europe early morning and is complementary to Asian financial markets.

A highly skilled and diverse workforce

NSW has Australia's largest population, with 8.2 million residents. More than two-thirds of the population hold post-school qualifications, and more than one third of Sydney's workforce are university qualified.

The state's population is among the most culturally and ethnically diverse in the world. English is the most widely spoken language, but almost a third of NSW residents speak a second language. NSW is home to the highest number of STEM graduates in the country and is a top ranked start-up ecosystem in the southern hemisphere.

NSW is home to Australia's largest ICT industry and investment into digital infrastructure.

Australia has the fourth-highest proportion of educated immigrants in the OECD. Australia is ranked 8 out of 134 countries in the 2023 Global Talent Competitiveness Index.

Personalised government support for international investors

Investment NSW centralises the NSW Government's trade and investment attraction activities, providing a single point of advice and support for the private sector.

Its role is to reinforce NSW as the most desirable place in the world to live, visit, study, invest and do business.

It acts as a concierge for business, universities, and other institutions, partnering with different parts of government and its international network to showcase what NSW has to offer and create valuable partnerships.

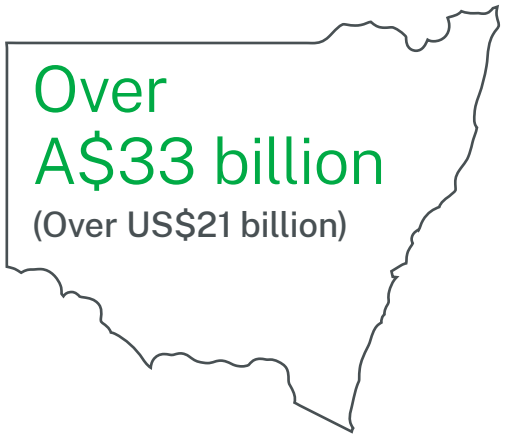
Find out what Investment NSW can do for your business: investment.nsw.gov.au

A world-class, integrated health system

NSW has Australia's largest and best-performing public healthcare system, and a globally significant research and development ecosystem with strong government backing.

NSW has an advanced and interconnected research and commercialisation ecosystem that is supported by internationally acclaimed health and education sectors.

NSW benefits from having a healthcare system that is connected. World-leading public healthcare is delivered through 228 public hospitals that are managed by 15 local health districts and two specialty networks, all supported by centralised policy and support pillars.



Over
A$33 billion
(Over US$21 billion)

public health system annual budget

228
public hospitals serve over 8 million people

3rd ★★★★★
most efficient healthcare system **in the world**

(The Commonwealth Fund, 2021)

Over
135,000
full-time equivalent staff

Statewide Biobank: Australia's first statewide Biobank, integrated with NSW's statewide **public pathology service**

Over
334,000
surgeries were performed during 2022–23

Over
3 million
emergency department attendances each year

Maximising partnerships, investment, training and research

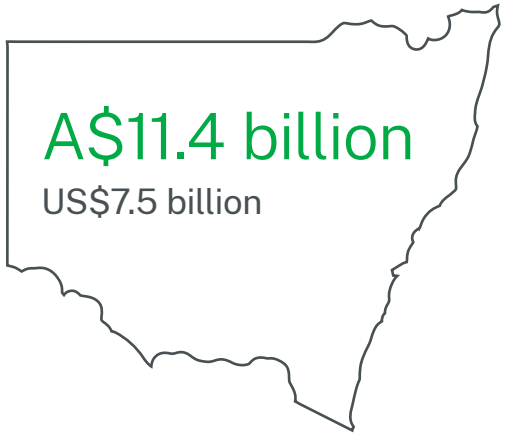
Home to globally significant Health and Innovation Precincts: distinguished crossroads of medicine, science, education and industry.

NSW is home to networked concentrations of expertise in both metropolitan and regional areas that attract investment, generate jobs, and are excellent places to live and work.

NSW's Health and Innovation Precincts co-locate health services, laboratories, education institutes, medical research institutes and industry to maximise partnerships, investment, training and research at key NSW Health sites around the state.

These networks span clinical areas, support translation from bench to bedside and foster responses to emerging infectious diseases.

Health and Innovation Precincts provide industry partners with access to diverse patient cohorts, clinical, public health and research expertise, high-quality infrastructure and services, and the ability to drive research and development without committing to the costs of an in-house team.



A$11.4 billion
US$7.5 billion

invested in R&D in 2019 by the NSW Government

NSW is home to

55% of Australia's life sciences companies and

44% of its start-ups

Two of the world's top 20 **universities**
(QS 2024)

7th **in the world** for health sciences research *(Nature, 2023)*

See pages 19 to 24 for information about NSW's leading Health and Innovation Precincts.

A global hub for health and medical research

The NSW Government has invested A$11.4 billion over four years for research and development. Continuous financial investment ensures that internationally recognised research is translated into therapies and practice both locally and globally.

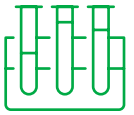
NSW Health has a dedicated Office for Health and Medical Research that supports research, translation and commercialisation through a range of programs:

Medical Devices Fund which is a seed funding program for new-to-world medical devices. Over the past decade, the Fund has awarded A$84.5 million to 45 medical devices. Recipients of the Fund have since raised significant capital funding, treated patients in NSW and abroad and contributed to employment in NSW and internationally by creating additional jobs.

Commercialisation Training Program which develops the commercialisation skills of innovators in medical devices, diagnostics, therapeutics, and software as a medical device. Graduates of the program have raised more than **A$87 million** in private and public funds. Graduates have gone on to successfully incorporate new companies, commence clinical trials, pilot technologies, enter new markets and create new jobs across the globe.

Translational Research Grants Scheme (TRGS) which builds research capability and accelerates evidence translation within the NSW health system to improve public health. A total of A$45 million has been awarded through seven rounds of the TRGS.

A$150 million over 10 years to build **cardiovascular research capacity** in NSW and make NSW a global leader in cardiovascular research.



Over **A$25 million** investment in COVID-19 research to inform the NSW (and national) response to the COVID-19 pandemic, enhance **research infrastructure** and translate COVID-19 research findings into clinical and laboratory practice.

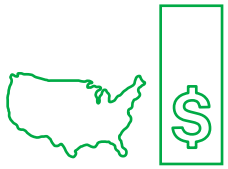
Health and Medical Research Concierge which is a free service to connect companies and researchers with experts, clinical networks, and research infrastructure.

Contact us: MOH-InternationalDesk@health.nsw.gov.au

Next-generation clinical trials

NSW is a premier destination for high-quality, efficient and cost-effective clinical trials.

NSW has a reputation as a globally competitive destination for clinical trials; particularly in early-phase trials.



Trials in NSW are
28%
less expensive
than in the US

Increasing up to
60%
with federal R&D
tax incentives

Governance and ethics structures enable clinical trials to start-up quickly. On average, NSW clinical trials have ethics approved and contracts signed within 90 days of application. Specialist ethics reviews of early phase trials enable approvals in just 20 days.

With one third of the NSW population born overseas and up to 47 percent with at least one parent born overseas, NSW benefits from an ethnically and culturally diverse population. Clinical trials can access the entire NSW public health system with one nationally recognised ethics application.

NSW has a statewide Clinical Trial Management System for public hospitals and healthcare services that supports central oversight and efficient delivery.

Rural Regional and Remote Clinical Trial Enabling Program

The NSW, ACT, and Australian Governments are working together to improve regional and rural communities' access to clinical trials. NSW Health and ACT Health, through the Office for Health and Medical Research, were awarded A$30.6 million over five years from the Commonwealth Medical Research Future Fund (MRFF) Rural, Regional, and Remote Clinical Trial Enabling Infrastructure (RRRCTEI) grant opportunity. The program will fund infrastructure initiatives to address the barriers to research in rural areas, increasing opportunities for national and international clinical trials. In April 2024, the Rural, Regional and Remote Clinical Trial Enabling Program established 3 locally led Clinical Trial Support Units serving regional NSW.

Clinical Trials Connect: personalised support for clinical trials

NSW Health offers a free, personalised concierge service to stand up clinical trials in NSW through to Australia and the APAC region. Clinical Trials Connect assists industry and researchers to establish clinical trials by:

- Linking trial investigators to research projects and engaging key opinion leaders
- Identifying potential patient populations
- Nominating contract research organisations from our large, competitive sector with specialist skills in managing domestic and international trials
- Targeting clinical and industry therapeutic experts to stand up international trials
- Finding specialist trial support services including clinical laboratory support, biostatistics, health economics etc.

Contact

clinicaltrialsNSW@health.nsw.gov.au
to run a high quality, fast, and cost competitive trial in NSW.

A thriving advanced therapeutics sector

NSW is an international hub for the research and development of advanced therapeutics.

NSW researchers and clinicians are recognised globally for their expertise and cutting-edge work in:

- Gene and cell therapies
- RNA therapies
- Bacteriophage therapies
- Vaccine technologies

NSW researchers and institutions provide complete therapeutic and vaccine pipelines from design, construction and testing through to small-scale production, clinical trials and patient treatment.

Cutting-edge facilities in NSW support innovative research, process development, advanced manufacturing, and delivery programs.

NSW is set to become a **major international hub** for advanced manufacturing

The NSW Government has invested in **Australia's first viral vector manufacturing facility** and **RNA research and pilot manufacturing facility,** ensuring that the state becomes a major international hub for advanced manufacturing.

The NSW Government continues to invest in workforce development, collaborative researcher, diagnostic laboratory and clinician networks, enabling infrastructure and health system readiness to fast-track access to novel therapies for our large and diverse population.

Therapeutic discovery

NSW has an advanced, interconnected ecosystem supporting the development of next generation therapeutics.

This includes:

- Gene and cell therapies
- RNA therapies
- Immunotherapies
- Bacteriophage therapies
- Plasmid-based therapies

NSW is dedicated to bringing therapies to patients faster and supports clinical trial designs that allow new therapies to be evaluated more rapidly.

NSW encourages adaptive trials and is leading the global shift towards Bayesian approaches. These innovative trial designs are flexible and responsive, allowing clinicians to answer complex questions faster, personalise treatment, and to stop trials early where problems or barriers are identified.

The state's manufacturing facilities enrich our advanced therapeutics ecosystem, as well as providing Australia's tertiary training program for GMP lab staff.

The NSW Government is investing:

- **A$134.5 million** to build one of the Southeast Asia-Pacific region's first GMP-grade clinical and commercial viral vector manufacturing facility
- **A$95.8 million** to establish a RNA research and pilot GMP manufacturing facility. This facility will be the first of its type in Australia and one of only a handful in the world where a range of RNA therapeutics and potential delivery technologies will be independently produced. The investment is supported by an additional **A$119 million for RNA research and development**.

RNA Australia

RNA Australia is a joint venture and collaboration between the NSW RNA Bioscience Alliance (14 universities) and the NSW Government to lead the development of a robust RNA R&D ecosystem in NSW.

Key objectives of RNA Australia

- **Support** the sustainable operations of the RNA Research and Pilot Manufacturing Facility towards achieving the desired commercial RNA R&D, products and services.
- **Develop** and support R&D and commercialisation of world-leading relevant technologies and therapeutics.
- **Accelerate** RNA R&D into new commercial products, services and expertise including delivery of vaccines.
- **Target** RNA therapies in medical applications, agriculture, biosecurity and other relevant sectors.
- **Improve** accessibility of advanced RNA technology therapies for humans and animals.
- **Boost** a strong network between universities, research organisations, industries, entrepreneurs and investors.
- **Foster** essential skills and pathways for innovation, R&D, manufacturing and commercialisation.

Opportunities

- **Access** to Open-source GMP Facility (from 2026) aimed at scaling and producing RNA therapeutics for Phase 1-3 clinical trials alongside the NSW clinical trial system.
- **Collaboration** and partnership with industry and universities including the 14 NSW and ACT universities.
- **Intellectual property** development with support from the RNA ecosystem.
- **Investment** in RNA developments and other related RNA activities.

Further information

rnaaustralia.com.au

Viral Vector Manufacturing Facility

A unique opportunity to partner with the NSW Government in world-leading viral vector manufacturing, the first of its kind in Australia.

The NSW Government has announced the establishment of a new company to operate the world-leading viral vector manufacturing facility based at Westmead, which will produce groundbreaking and life-saving therapies.

The **A$134.5 million investment** by the NSW Government will support the first GMP-grade clinical and commercial viral vector manufacturing facility in the Southeast Asia Pacific region.

The commercial company, registered as Viral Vector Manufacturing Pty Ltd, with an agile, responsive operating model will provide a strong base for the sustainable, long-term success of the facility.

Stage 1 of the facility is operational for use in gene therapy research with the first clinical trial anticipated to commence in 2025 using vectors from the facility.

The **Stage 2** facility is currently under construction and once completed will provide NSW with a commercial-scale viral vector manufacturing facility capable of meeting the growing demand for viral vectors.

Source: Sydney Children's Hospitals Network

CASE STUDY

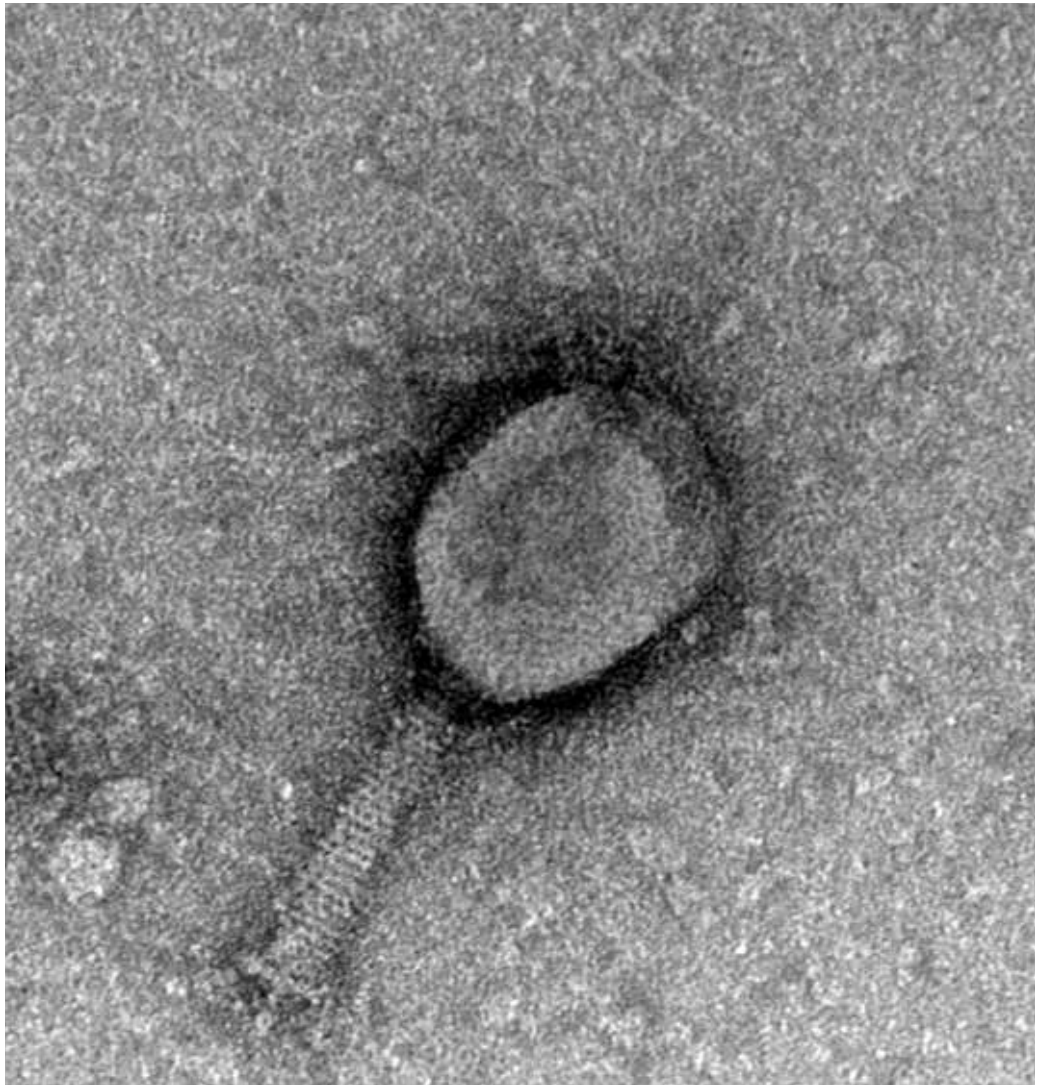
Global leadership in bacteriophage therapy: a promising solution against superbugs

In an Australian first, a NSW research collaboration led by Professor Jon Iredell has administered adjunctive phage therapy to more than 38 critically ill adult and paediatric patients in cities and regional Australia since 2017. The collaboration involves the Westmead Institute for Medical Research (WIMR), the University of Sydney, and the Westmead Hospital.

Since December 2021, patients in Australia have gained access to bacteriophage therapy through the Therapeutic Goods Administration (TGA) Special Access Scheme. The pathway enables patients to receive this innovative treatment under the Standardised Treatment and Monitoring Protocol (STAMP). Following approval of STAMP, the Team has received 118 requests from around Australia for phage susceptibility testing, and 20 patients have been treated in NSW, Queensland and South Australia. The target pathogens treated with phages include *Pseudomonas aeruginosa, Escherichia coli, Staphylococcus aureus, Klebsiella aerogenes, and Mycobacterium abscessus.* The Team has formulated for intravenous, nebulised, oral, topical, and instillations into cavities or drains. There have been no related serious adverse events.

The STAMP protocol has enhanced the standardisation and monitoring of these therapeutic interventions, ensuring optimal patient care.

The Team's work in phage therapy continues to highlight its potential as an alternative approach to combating antimicrobial resistance and treating difficult-to-treat infections. Ongoing research and clinical experiences will continue to provide evidence on the safety, efficacy, and broader applications of phage therapy.



Source: Dr Ali Khalid, Sydney University and Westmead Institute of Medical Research

Guiding vaccine research and development

NSW researchers are international leaders in vaccine development.

NSW researchers:

- Were central to the development of the highly successful herpes zoster vaccine
- Lead an international team funded by the NIH to develop the next generation of TB vaccines
- Played major roles in the development of HIV treatments
- Are accelerating the next generation of COVID-19 vaccines with variant-proof and nasal delivery formulations.

Bringing together the leading **vaccine, infection and immunity** researchers and practitioners in NSW

NSW is prioritising the rapid evaluation of pre-clinical vaccine candidates and novel combination vaccines targeted to regions with distinct infectious disease profiles.

NSW's Vaccine, Infection and Immunity (VIIM) Collaborative Research Group informs an iterative vaccine policy for COVID-19. VIIM brings together the leading vaccine, infection and immunity researchers and practitioners in NSW. It incorporates two universities, four medical research institutes, NSW Health Pathology, adult and paediatric health services, and the National Centre for Immunisation Research and Surveillance. VIIM is well placed to support translational activities along the vaccine development pipeline, from pre-clinical development to policy and practice.

The Waratah Vaccine Trial Alliance is a one-stop-shop for industry and investigators interested in conducting vaccine trials in NSW. The Alliance is a multidisciplinary collaboration of leading and emerging vaccine trial researchers, consumers and other stakeholders to support a coordinated approach to vaccine clinical trials. The Alliance will grow the next generation of clinical vaccine trialists.

CASE STUDY

Accelerating non-animal models: saving time, money, and animals

Non-animal models that use human-derived or humanised cells, tissues, or data, are beginning to exceed the performance of animal models in drug development and medical research.

NSW is positioning itself at the forefront of the global shift towards non-animal technologies in medical research – prioritising advances in human cell and computer-based models that can more accurately mimic human responses, and reduce or replace animal testing.

The NSW Government is aligned with policy shifts in the United States and Europe that promote the use of non-animal technologies in research. These changes will bolster the already sturdy growth in the global non-animal testing market, which is valued at USD$1.11 billion.

Non-animal technologies provide better biological relevance to humans. By supporting 'fast failure' of unsuitable therapeutic candidates they can increase productivity and reduce R&D costs. Non-animal technologies also support '3R' objectives to replace, reduce and refine the use of animals for research and testing purposes.

These technologies have applicability from screening potential drug candidates, to toxicology, and optimising personalised models for trial recruitment and clinical treatment.

In Australia, the industry is forecast to generate over A$1.5 billion in revenue and over 5,000 jobs by 2040.

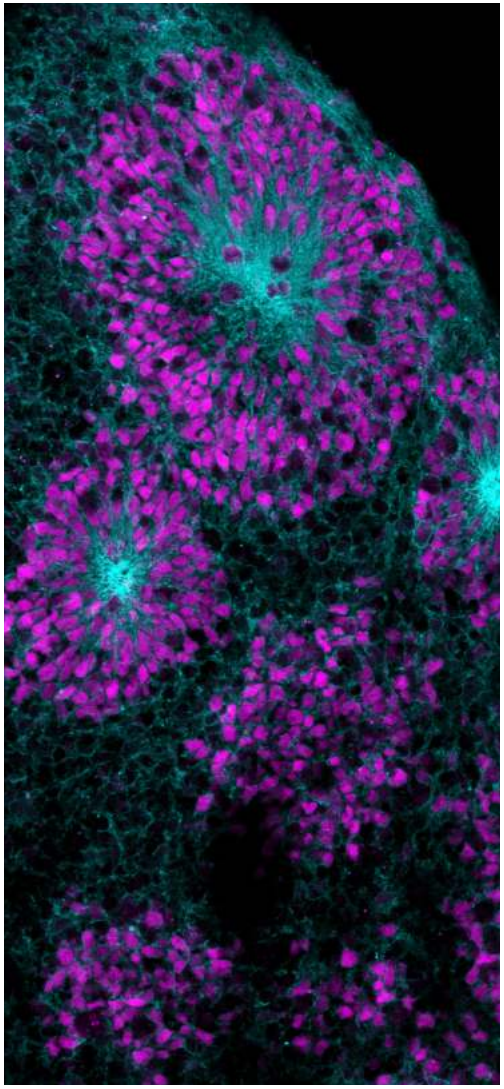
Complex three-dimensional human cell models

By more closely mimicking the human body, organoids ('mini-organs') and organs on chips allow researchers to evaluate their products in conditions closer to the real thing. The NSW based Stem Cell and Organoid Facility at Children's Research Medical Institute has developed neural, cardiac, kidney, and lung organoids and is at the forefront of stem cell and translational research in Australia. These organoids can include a patient's genetic make-up and disease characteristics – providing a near-perfect model for testing new treatments.

Computer simulations

Deep Learning computational modelling is revolutionising molecular science and can complement or replace some animal model research. With accuracy approaching real-world experiments, AI platforms can enable researchers to design constructs and predict protein structures and complexes within hours to minutes, saving time and money. A world top 20 university, The University of New South Wales (UNSW), is accelerating Deep Learning adoption for structural biology by investing in state-of-the-art hardware and employing expert molecular computational scientists to support researchers from disparate fields apply these methods to their projects successfully. UNSW is focused to deliver rapid adoption of the newest molecular code available, including Deepmind's Alphafold2, diffusion methods and other AI advances.

Together, these technologies have the potential to lead to transformative impacts for patients.



Acknowledgement: Brain organoid generated from human induced pluripotent stem cells (hiPSCs) showing neural rosettes containing nascent neurons in magenta and cyan. Dr Anai Gonzalez Cordero, Stem cell Medicine Group.

NSW leading the way in the use of novel stem cell and organoid biotechnologies

Investment from NSW Health is helping to accelerate this exciting new area of medical research.

Children's Medical Research Institute (CMRI) in Sydney, Australia, is home to one of the country's leading Stem Cell and Organoid facilities. The facility is part of the NSW Government's Organoid Innovation Centre – the first of its kind in Australia.

Organoids are also known as 'laboratory-generated mini-organs'. Small samples of skin or blood from patients or healthy individuals are induced in the laboratory to 'turn back' into stem cells (induced pluripotent stem cells (iPSCs), which can then be directed to become almost any type of cell (nerve, eye, inner ear, lung, kidney cells, etc), and to then form mini-organ-like complexes, known as organoids.

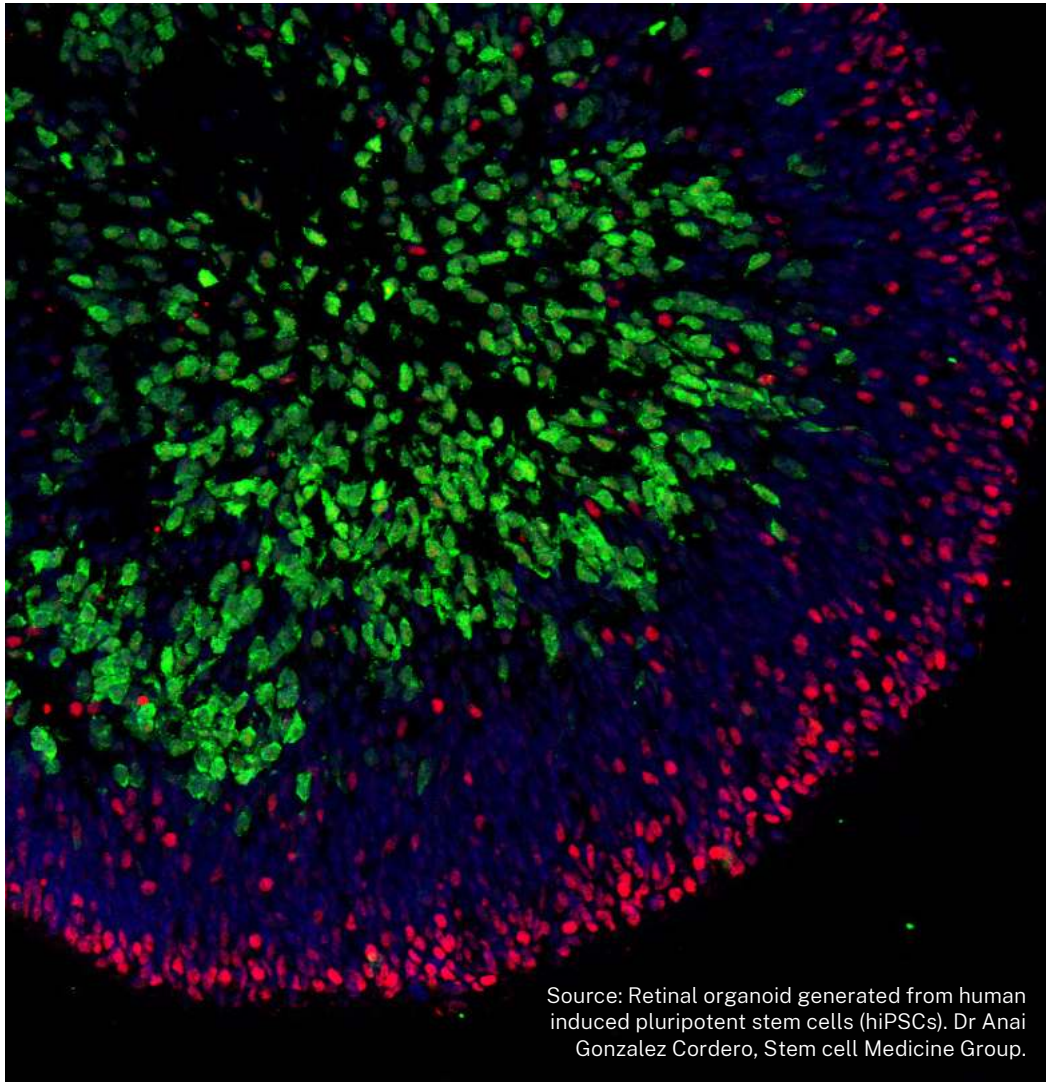
Organoids offer a unique way to understand human biology, provide unlimited quantities of advanced model systems for research, and are a significant step toward increased use of non-animal models in medical research.

CMRI scientists have the expertise to generate various types of organoids, enabling the study of the causes of human diseases and providing an ideal model for testing novel treatments.

One of the most successful uses of this technology at CMRI has been through the generation of retinal (eye) organoids. CMRI's Stem Cell Medicine Group and the Eye Genetics Research Unit have pioneered the use of organoids to test therapies for devastating genetic blinding diseases.

Organoids can be used to establish whether genetic variants of unknown significance are disease-causing. Patients with inherited retinal diseases without a confirmed diagnosis are ineligible for treatments or upcoming clinical trials. Organoids generated from patient stem cells can help determine whether genetic variants are indeed causing disease, thus offering patients a pathway to therapy for which they were previously ineligible.

This work is made possible through the well-established collaborations between researchers at CMRI, and clinicians at Sydney Children's Hospitals Network, Sydney Eye Hospital, Save Sight Institute, University of Sydney and Luminesce Alliance.



Source: Retinal organoid generated from human induced pluripotent stem cells (hiPSCs). Dr Anai Gonzalez Cordero, Stem cell Medicine Group.

Westmead Health Precinct

Spanning 75 hectares, the Westmead Health Precinct ecosystem comprises over 400,000m^2 of high-end health related developments, including two major hospitals, five world-leading medical research entities, two universities and the largest research-intensive pathology service in New South Wales.

Partners include:

- Western Sydney Local Health District
- Sydney Children's Hospitals Network
- Children's Medical Research Institute
- Westmead Institute for Medical Research
- NSW Health Division for Clinical Innovation and Research, and
- NSW Health Pathology

Western Sydney – home of the Westmead Heath Precinct

With **over 1 million residents**, Western Sydney is home to more than **20% of Sydney's population.**

50% of the community was born overseas and over **54% speak a language other than English.**

Leading areas of expertise

The Westmead Health Precinct is recognised for its extensive and highly specialised clinical services and research spanning across the life span, from pre-natal to end of life.

Advanced Therapeutics will change healthcare, bringing together world-class expertise in clinical medicine encompassing the entire translational pathway from basic science through to clinical trials.

Translational Cancer research programs capitalise on world-class research strengths, improving the link between research and clinical care and applying discoveries to some of the world's most serious diseases.

Infectious Diseases, Immunology and Vaccinology researchers are dedicated to tackling the health and socioeconomic consequences of emerging and re-emerging infectious diseases, supporting the translation of research into the development of vaccines, new treatments and diagnostics.

Westmead has more **Clinical Trials** than any other location in NSW, providing patients with access to cutting-edge treatments across the human lifespan from birth to end of life.

Digital Health and Big Data is at the very frontier of advancing our understanding and delivery of healthcare, with data mining, analytics and modelling delivering important insights into disease classification, diagnosis and prognosis.

Enabling infrastructure

The Westmead Health Precinct has benefitted from a A$5 billion investment by the NSW Government towards several health and transportation upgrades.

Major infrastructure includes:

- Central Acute Services Building (CASB) at the Westmead Adults Hospital
- Children's Hospital at Westmead Redevelopment
- Australia's first Viral Vector Manufacturing Facility (VVMF) (see page 14)
- NSW Biocontainment Centre
- Westmead Innovation Centre
- Parramatta Light Rail
- Sydney Metro West Westmead stop connecting Westmead to Sydney's CBD.

Other highlights include:

- Australian Cancer Research Foundation International Centre for the Proteome of Human Cancer (ProCan)
- National Centre for Immunisation Research and Surveillance (NCIRS)

Looking to the future

The future opportunity is Westmead's 'Health Enterprise Zone' or 'HEZ', more than 12 hectares of developable area, presenting the opportunity for industry (commercial and advanced manufacturing) to co-locate at the Westmead Health Precinct. HEZ will drive economic advancements and create employment opportunities and services for Western Sydney.

Find out more

westmeadhealthprecinct.com

Westmead Health Precinct Industry Prospectus

Connect with Westmead Health Precinct

Emma Clarke, Director Westmead Health Precinct Leadership Team, WSLHD

Email: Emma.Clarke1@health.nsw.gov.au

WestmeadPrecinct@health.nsw.gov.au

Liverpool Innovation Precinct

Pioneer Member, Global Institute on Innovation Districts
Transforming our city and impacting the world through health, education and research innovation.

4 universities

1.6% year-on-year population growth

34 median age

150+ languages

Liverpool, Australia's next global gateway

Located 35km to the Southwest of the Sydney CBD, the Liverpool Innovation Precinct co-locates government, academia, and business. Investments are facilitated through a single front door, with a partner landscape and ecosystem that includes multinationals, startups, commercialisation advisors, venture capitalists and advanced manufacturers.

Liverpool is **Australia's university city**, and with a growing and young population of rich cultural diversity, the region is a hotspot for clinical trials.

Employment in Liverpool is dominated by healthcare at 14.5%, compared to 11.9% for Greater Sydney and 13% for NSW.

Over A$20 billion is being invested in Liverpool in major infrastructure projects, including **Western Sydney Airport**, Australia's newest, most advanced 24-hour international airport.

Areas of expertise

The South-Western Sydney Local Health District in partnership with the Ingham Institute for Applied Medical Research have invested significantly in clinical research resulting in the region boasting an international reputation across diverse fields, including:

- Neurosciences, Stroke and Neurointerventional Radiology
- Obstetrics and Women's Health
- Cardiovascular Diseases
- Orthopaedics and Muscular Skeletal Disorders
- Cancer

South-West Sydney Clinical Trials Centre

Delivering global and local trials, the Centre's 65 coordinators and 150 investigators support 500+ clinical trials at any one time. The region's ethnic diversity offers clinical researchers a population pool reflecting some of the world's greatest health challenges and global markets.

The Perich Centre

The Liverpool Innovation Precinct specialises in robotics and medical devices. The Perich Centre draws on its partnerships with researchers, start-ups, universities and multinationals to see the best minds collaborate with the common purpose of advancing health through the development of novel **medical devices, health technologies** and **robotics**.

The Precinct, in partnership with the International Medical Robotics Academy, hosts the only **surgical robotics training programs** in NSW accredited by the Royal Australasian College of Surgeons.

The Commercialisation Advisory Group (COMAG)

Whether a start-up or multinational, the Liverpool Innovation Precinct is here to help develop and deliver new health technologies that advance healthcare. The Commercialisation Advisory Group (COMAG) assists companies and individuals to work with LIP partners and **commercialise innovations**. Consisting of clinical, surgical and research expertise, plus start-up mentors and experienced ex-multinational executives, COMAG provides innovators with the support and connections they need.

Find out more

liverpoolinnovation.com.au

Liverpool Innovation Precinct Investment Prospectus

Connect with Liverpool Innovation Precinct

Lance Chia, Director

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St Vincent's Sydney Health Innovation Precinct

Our vision is to transform healthcare through research, clinical, educational, and industry collaborations - inspired by the spirit of deep compassion and equity on which we were founded.

Our cornerstone partners are **St Vincent's Health Network Sydney**, the **Garvan Institute of Medical Research**, and the **Victor Chang Cardiac Research Institute.** With university partners including the **University of New South Wales**, and other collaborative partners such as the **Kirby Institute** and the **Nursing Research Institute.**

Located in the heart of Sydney- with a footprint reaching far beyond

Founded in 1857, we are Australia's oldest health precinct. Our cornerstone partners are co-located together in the heart of Sydney, close to transport links, cafes, restaurants and more.

However, our footprint reaches well beyond Sydney. We care for patients from across the country within our areas of excellence – including heart transplants, cancer, and treatments for rare immunological disorders.

We also boast **a national clinical footprint through St Vincent's Health Australia** - the country's largest not-for-profit health and aged care provider, with over 35 hospitals and aged care facilities across the eastern seaboard. Our extensive research footprint is evident, particularly through the **Victor Chang Cardiac Research Institute's** Hubs in South Western Sydney, Melbourne and Perth, as well as international collaborative relationships with other global leaders in the US, UK, EU and throughout Asia.

Enabling infrastructure

Within our Sydney Precinct we have public and private hospitals, a custom-built suite of consulting rooms, pathology for research and care, day surgery theatres, and more. This is all co-located with two of Australia's most recognised medical research institutes, that house impressive clinical and research infrastructure.

Our **Victor Chang Cardiac Research Institute Innovation Centre** is the home of high-content and high-throughput technologies focused on translational medical research including disease modelling and validation of therapeutics. The facilities include **specialist pre-clinical, clinical and other specialised imaging, stem cell production, metabolomics** and **data science,** and with dedicated staff who have outstanding technological and biological expertise.

Through the Garvan and St Vincent's Centre for Applied Medical Research, we also house **single-cell and whole genome sequencing, pre-clinical modelling, gene editing, clinical trial facilities, histopathology, tissue banks, cell line identification,** and **genotyping technologies.**

Core capabilities

Our key areas of shared strengths as a Precinct include care and research in:

- **Cardiovascular Health** - transplantation, mechanical hearts and valves, cardiac genomics
- **Cancer** - solid tumour, head and neck, breast, colorectal, pancreatic and prostate
- **Immunology and Infection** - rare genetic immunodeficiencies and acquired immunodeficiencies

Australia's first heart transplantation program started here, and we are the **5th busiest heart transplant hospital in the world**. As the home of Australia's leading institute focused on cardiac research - **we are driving innovation in heart health.**

Our **Kinghorn Cancer Centre** focuses on translational research and personalised cancer care. A collaboration between **St Vincent's Hospital Sydney** and the **Garvan Institute of Medical Research,** the Centre houses researchers and clinicians working together to fight cancer, with clinical trial and patient support facilities.

We specialise in **rare genetic immunodeficiencies** and **acquired immunodeficiencies** (e.g. through treatments for transplantation or cancer, or through infections such as HIV). We diagnosed the first Australian case of HIV and opened the first dedicated ward to care for patients with compassion, and are now home to the WHO designated reference laboratory for Asia Pacific regional drug-resistance testing.

We are also Australia's leading centre for treatments and studies combating serious **allergic disease in adults**.

For more information

svship.org.au

Connect with St Vincent's Sydney Health Innovation Precinct

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Randwick Health & Innovation Precinct

RANDWICK HEALTH & INNOVATION PRECINCT

The future of lifelong health

The Future of Lifelong Health: The Randwick Health & Innovation Precinct brings together world-class education, research and healthcare organisations to address real-world problems across the lifespan.

The Precinct's four Founding Partners - the University of New South Wales (UNSW), South Eastern Sydney Local Health District, Sydney Children's Hospitals Network, underpinned by Health Infrastructure NSW - are joined with 14 medical research institutes and centres, striving to become a transformative and collaborative place of excellence, solving global challenges to enhance and nurture lifelong health.

Conveniently located alongside Sydney's Eastern beaches

A 20-minute taxi ride from Syndey airport, the Randwick Health & Innovation Precinct is located between Sydney's Eastern beaches and the Sydney CBD, with easy light rail access to both. The health campus and the university campus are adjoining and fully integrated. The Precinct sits within the broader community of the Royal Randwick Shopping Centre, the restaurants at the Randwick 'Spot', and Coogee Beach.

More than A$1.6 billion is being invested by state and federal Government, the University of New South Wales and philanthropic donors to strengthen health, research, education and innovation outcomes of the Precinct. This will deliver a new Prince of Wales Hospital Integrated Acute Services Building A$780 million, the redevelopment of the Sydney Children's Hospital, Randwick including Australia's first Children's Comprehensive Cancer Centre (A$658 million); and the UNSW Health Translation Hub (A$250 million).

Major research assets

- Scientia Clinical Research Centre
- Ramaciotti Centre for Genomics
- Research Imaging NSW (Human Imaging Research Facility)
- Bioanalytical Mass Spectrometry Facility
- Electron Microscopy Unit
- Nuclear Magnetic Resonance Facility
- Spectroscopy Facility
- UNSW Biorepository
- Biomedical Imaging Facility
- Biological Resources Imaging Facility
- Recombinant Products Facility
- UNSW Node of the Australian National Fabrication Facility

Leading translational research themes

- Neuroscience, Mental Health and Drug and Alcohol Disorders
- Molecular Oncology
- Digital Health
- Genomics and Personalised Medicine.

In health technology innovation and industry partnerships we have strengths in medical devices, the RNA Institute, infectious disease via the Kirby Institute, and strong capabilities in clinical trials led by Scientia Clinical Research and the George Institute.

Commercialisation support

The UNSW Founders Program supports staff, students, and alumni to turn their research into startups. This university program is ranked number 1 in Australia, with 25% of Australia's top innovators hailing from UNSW.

The Precinct is also home to a growing number of startups and scaleups who are using UNSW's laboratories and services to establish their products, including Psylo, DropBio Health, Bondi Bio, Minimum Bio and Medlab.

Find out more

rhip.org.au

Industry prospectus

Connect with Randwick Health & Innovation Precinct

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Sydney Innovation Precinct for Health Education Research (SIPfHER)

A world leading health, education, research and innovation precinct.

For over 140 years, Royal Prince Alfred Hospital (RPAH) in Camperdown, Sydney, and the University of Sydney (USyd) have partnered to solve some of the world's most complex health problems. SIPfHER enhances this partnership, bringing together RPAH, USyd, medical research institutes (MRIs), centres of excellence, and industry partners to create an ecosystem for discovery.

It is the joint mission within SIPfHER to strengthen the identity of Camperdown as a global destination for health-related research, education, innovation and commercialisation.

A node of Tech Central and the 'to be' home of the Sydney Biomedical Accelerator

Located a few kilometres from the Sydney international airport and the Sydney CBD, SIPfHER offers quick connections to important surrounding industrial and tech focussed centres.

The area is undergoing **major transformation**, facilitated by **infrastructure investment, industry attraction, internationally recognised expertise, Australia's highest ranked tertiary and quaternary referral hospital** (RPAH), and internationally ranked university (USyd).

Located in Camperdown, **the Sydney Biomedical Accelerator Complex** (SBA) will be a cornerstone within SIPfHER and the broader Tech Central precinct in the heart of Sydney. The SBA complex will be physically connected to RPAH and to Susan Wakil Health Building (SWHB), the largest training facility for health professionals in the Southern Hemisphere.

Enabling infrastructure

The two new SBA buildings offer **36,000m² of new research, education, innovation and collaboration facilities,** including:

- Physical containment (PC) levels 2 and 3 wet labs
- Dry research and collaboration spaces
- Prototyping core research facility for medical devices
- Modernised and consolidated Biobank
- GMP cleanrooms
- Bio-additive Manufacturing facilities
- Computing and bioinformatics for Precision Medicine
- State of the art surgical learning facilities, mortuary, anatomy research and training
- Core research facilities for cryometry, microscopy, preclinical imaging, omics, organoids, drug discovery, protein production
- Small animal facilities
- Collaboration spaces for researchers, industry partners, and clinicians, including innovation and start-up hub spaces
- Physical connections to patient facing clinical spaces and clinical trials within RPAH

Boasting research strengths that are responsive to changing needs

At the core of the Precinct is a commitment to providing modular, flexible and adaptable spaces to cater for changing needs and priorities. Existing research priorities and strengths exist in the areas of:

- Biochemistry
- Cancer Biology
- Cardiovascular
- Cell and Gene Therapy
- Immunology
- Infectious Diseases
- Medical Device Technologies
- Microbiology
- Neuropathology
- Precision Medicine
- Transplantation Research
- Biobanking

There are currently **768 clinical trials underway** within Sydney Local Health District.

Find out more

sydneybiomedicalaccelerator.org

Connect with SIPfHER

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The John Hunter Health and Innovation Precinct

NSW GOVERNMENT | Health
Hunter New England
Local Health District

Our vision is to be at the centre of global innovation, research and translational efforts to solving real-world challenges in regional and remote healthcare.

Our mission is to drive the rapid development, evaluation and translation of healthcare and health industry solutions, ensuring people living outside metro areas benefit from the extraordinary pace of change and advancement in healthcare. We achieve our greatest impact by living our core value that working in partnership drives progress.

Located in Newcastle - the heart of Australia's largest regional economy

Occupying 55 hectares, The John Hunter Health and Innovation Precinct is 90 minutes north of Sydney, on the coast of the world-renowned Hunter Region. Newcastle is a thriving city with a rich history of innovation and world leadership in healthcare, high-tech manufacturing, heavy industry, resources, viticulture and global trade and shipping.

Newcastle offers a high standard of living and community amenity, a highly networked and engaged business community, a well-developed Health and MedTech Industry Cluster (hmic.org.au), and affordable residential and industrial real estate.

The Precinct is led by the Hunter New England Local Health District, which provides health services to more than 1.5 million people who are a highly representative and research engaged population.

Enabling infrastructure

With master planning underway and a single government landowner overseeing land release, the Precinct offers an unmatched life sciences-oriented development opportunity in one of Australia's fastest growing cities.

Our world-class infrastructure includes:

- **John Hunter Hospital & John Hunter Children's Hospital** An 820-bed tertiary referral and teaching hospital with impressive clinical trials and basic science capability.
- **Health Innovation Living Lab** A 500m^2 innovation incubator with R&D labs, bio-fabrication services, coworking spaces and adjacent clinical simulation facilities embedded in the John Hunter Hospital
- **Hunter Early Phase Clinical Trials Facility** Linked to the Regional, Rural and Remote Clinical Trials Northern Node that services 2 million people, the facility offers inpatient beds and day-stay infusion supporting drug, device and software as clinical device studies.
- **Hunter Medical Research Institute** Australia's only comprehensive regional medical research institute. Housing 450 researchers, it provides supporting imaging, clinical trials, health economics, biobanking, data and informatics infrastructure and over 16,000m^2 of lab, co-working, clinic and administrative facilities.

Providing clinical and translational research capabilities in:

- Digital Health
- Health Technology
- Operations, Logistics and Manufacturing
- Sustainability, as well as
- Therapeutic areas of Neurology, Metabolic Disease, Cardiac Care, Respiratory Disease and Immunology
- As early adopters of telehealth technologies, we are **the lead development and adoption site for the NSW Government's A$1 billion state-wide Single Digital Patient Record program,** are developing a 300+ bed virtual hospital, and partnering with industry to develop and implement AI health technologies.

We are pioneers in stroke reperfusion therapies, stroke ambulance services including in-field microwave tomography imaging, novel concussion diagnostic technologies and recovery models for contact sports, as well as world leading multidisciplinary diabetes care models, including satellite enabled mobile service delivery and point of care diagnostic platforms for remote communities.

Find out more

Promotional video for the Precinct:
vimeo.com/766254988

Connect with John Hunter Health & Innovation Precinct

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Make your opportunities happen in NSW

Contact us

For help to access NSW Health, visit our Health and Medical Research Concierge at medicalresearch.nsw.gov.au/research-concierge or email MOH-InternationalDesk@health.nsw.gov.au

For general information on establishing, growing and expanding your business in NSW, contact Investment NSW at investment.nsw.gov.au or email investment.inquiries@investment.nsw.gov.au

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