



Research Strategy

Our journey to world-class
care and research

Central Adelaide Local Health Network
2023-2028



Government
of South Australia

Health

Central Adelaide
Local Health Network

A Research Strategy aligned to our vision

This Research Strategy confirms Central Adelaide Local Health Network's (CALHN's) vision to be a global leader in research and a provider of world-class care. We will continue to foster world-class research talent, embrace innovation, technology and big data, and build mutually beneficial research partnerships that lead to better patient outcomes.

Our commitment to world class-care

Through research, we will enhance our understanding of the mechanisms of disease and prevention. We will seek to find new treatment options, and diagnostic and predictive tools to detect and assess disease progression. Our research agenda will address important issues such as an ageing population and health inequities.

We will position CALHN as a place that attracts and develops highly respected research talent and that encourages life-long learning. Clinicians with academic affiliations with tertiary education institutions will continue to play a key role, driving scientific advances such as collaborative clinical trials and innovative data-driven care, which give patients access to the latest treatments and grow our evidence base.

These elements are all critical to a contemporary, responsive and world-class healthcare organisation. When operationalised, this Strategy will position us as a leading academic health sciences network (AHSN) capable of rapidly translating research into best practice care.

Delivering ground-breaking research

We see extensive possibilities in the research already underway in South Australia and into the future.

CALHN's access to unique partnerships allows us to combine efficiencies, infrastructure and expertise to improve clinical practice and outcomes.

CALHN is committed to fostering scholarships, training and ongoing education. To achieve this, a supportive culture, research leadership, the right alliances and networks, and succession planning are key. Our success will be underpinned by good governance, prioritising enhanced patient experiences and efficient business operations.

Through this Strategy, our aspiration goes beyond delivering leading healthcare services to our community and extends to shaping better health outcomes for all South Australians.

Research-driven care

CALHN is the largest of the local health networks in South Australia, servicing the most populous catchment and providing state-wide services to other South Australian and interstate residents. Upwards of 17,000 dedicated staff contribute to the health and wellbeing of the community through our sites and services.

Investment in research innovation and the delivery of enabling technology is key to embedding research across our services, including in the biomedical, nursing, allied health and health services research spheres. We commit to this because it will provide the best possible whole-of-person and population health outcomes.

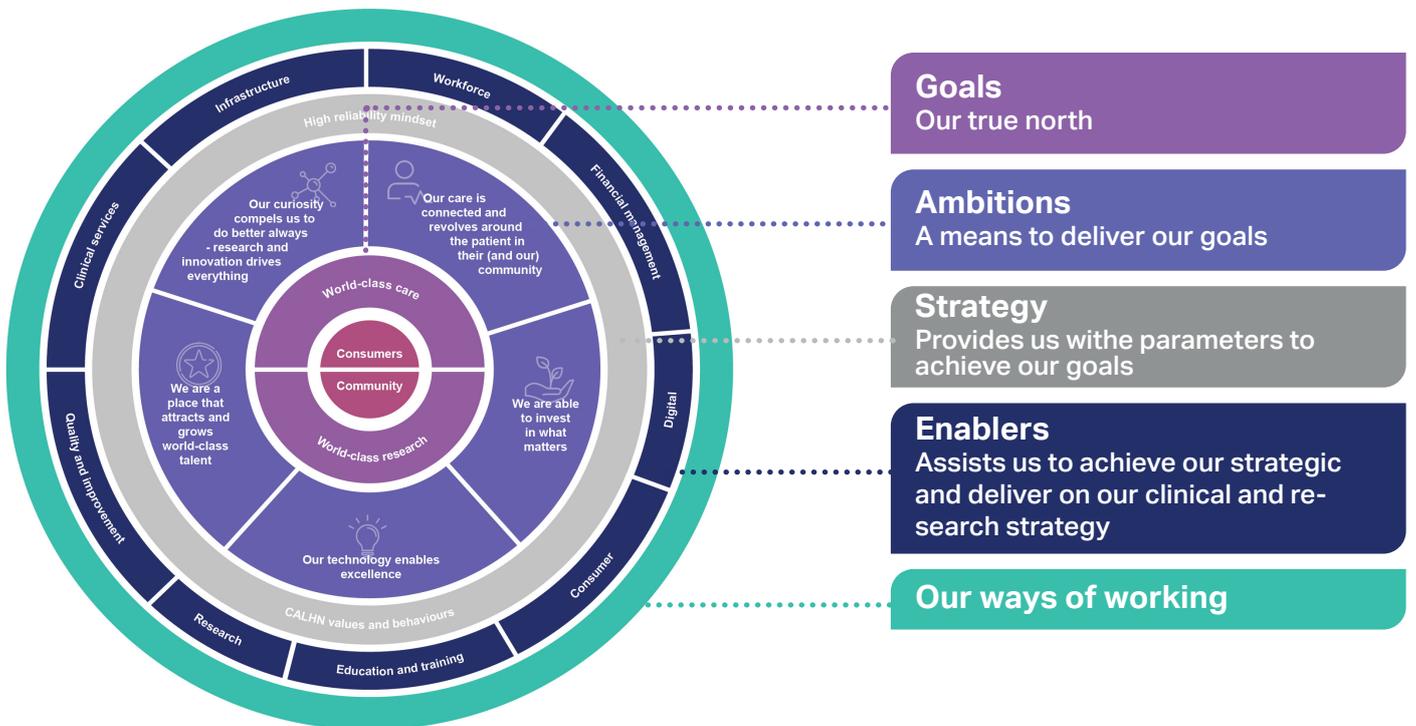
Our vision

To shape the future of health with world-class care and world-class research.

Our strategic ambitions

-  **Our care is connected and revolves around the patient in their (and our) community.**
-  **Our curiosity compels us to always do better – research and innovation drives everything.**
-  **We invest in what matters.**
-  **Our technology enables excellence.**
-  **We attract and foster world-class talent.**

The diagram below combines both our strategic ambitions and the things that enable us to work to achieve our vision.



Goals
Our true north

Ambitions
A means to deliver our goals

Strategy
Provides us with the parameters to achieve our goals

Enablers
Assists us to achieve our strategic and deliver on our clinical and research strategy

Our ways of working



CALHN's research environment

Research at CALHN takes place within a dynamic network of research endeavour across several mutually reliant organisations. The proposed merger between The University of Adelaide and the University of South Australia will affect how we operate with both new opportunities arising and potential challenges. Similarly, we have a responsibility to the South Australian people, and we must be responsive to the system priorities of SA Health. We all have a role to play in the health services research ecosystem.

Many of our closest partner organisations are in the Adelaide Biomedical Precinct on North Terrace in the city of Adelaide (see diagram on next page).

CALHN sites where both care and research occur include the Royal Adelaide Hospital (RAH), The Queen Elizabeth Hospital (TQEH), Hampstead Rehabilitation Centre, Glenside Health Services and the Repat Health Precinct. We also conduct world-leading specialised research within our Statewide Clinical Support Services, including SA Pathology, BreastScreen SA, SA Medical Imaging and SA Pharmacy.

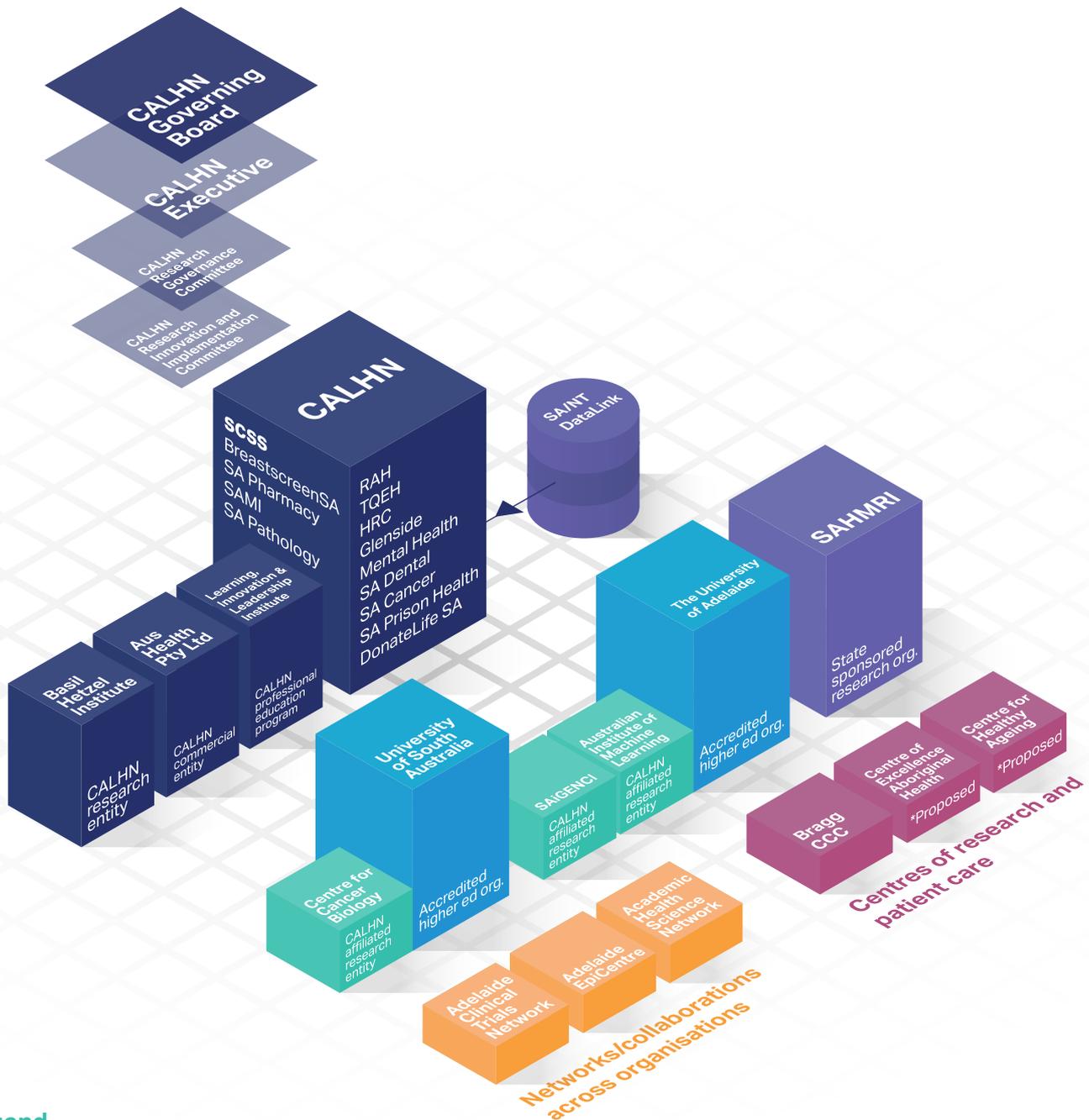
CALHN's numerous community health services lead the way in health research focusing on a niche client base and speciality services. These include Adelaide Dental Hospital, SA Dental, SA Prison Health, DonateLife SA and our Intermediary Care Services.

We maintain an evolving symbiotic relationship with Adelaide's universities and other health services and research organisations. While we rely on universities to train health care professionals, universities also rely on hospitals for clinical placements and training.

The geographical locations of CALHN sites and organisations we work with are shown below. Our proximity coupled with a shared aspiration to grow research in South Australia presents a unique opportunity to develop capability within the State.

This diagram also includes a number of entities or research groups that will be developed under this strategy.

Adelaide Biomedical Precinct North Terrace



Legend

- Bragg CCC** - Bragg Comprehensive Cancer Centre
- CALHN** - Central Adelaide Local Health Network
- HRC** - Hampstead Rehabilitation Centre
- RAH** - Royal Adelaide Hospital
- SAHMRI** - South Australian Health and Medical Research Institute
- SAiGENCI** - South Australian immunoGENomics Cancer Institute
- SAMI** - South Australia Medical Imaging
- SCSS** - Statewide Clinical Support Services
- TQEH** - The Queen Elizabeth Hospital

Key research hubs

CALHN employs many internationally recognised researchers. We promote productive research collaborations with local, national and international stakeholders including:

- local universities (The University of Adelaide, University of South Australia, and Flinders University)
- national and international universities
- other metropolitan and rural health networks in SA, such as Northern Adelaide Local Health Network (LHN) and the Women’s and Children’s Health Network and Country LHNs
- other health care providers across Australia, such as Monash Health
- international health networks, such as the University Health Network (Toronto), and others.

Collaborating with our partners, CALHN researchers perform commercial, technological and health services-based research that improves patient care, treatments and most critically, health outcomes.

Royal Adelaide Hospital

Located in the Adelaide Biomedical Precinct, the Royal Adelaide Hospital (RAH) houses clinical, allied health and social researchers. By strengthening allied health and health services research, CALHN aims to provide improved service delivery and new ways of delivering care to our diverse and geographically-dispersed population.

Basil Hetzel Institute and The Queen Elizabeth Hospital (TQEH)

In the west of the CALHN catchment, the Basil Hetzel Institute for Translational Health Research (BHI) is the productive research arm of TQEH. The BHI has an established reputation for producing world-class research, publications, and discoveries. Sitting within the organisational structure of CALHN, the BHI works in close collaboration with The University of Adelaide and the University of South Australia.

SA Pathology and the Centre for Cancer Biology

Along with the University of South Australia, CALHN and its SA Pathology service partners come together in the Centre for Cancer Biology (CCB). This is a medical research institute focused on cancer research. It carries out world-class innovative research examining the fundamental causes of cancer and translating findings into preventative strategies and treatments.

SAiGENCI

CALHN has established a partnership with The University of Adelaide to create the A\$80 million South Australian ImmunoGenomics Cancer Institute (SAiGENCI). As an independent cancer-focused medical research institute, SAiGENCI conducts discovery research, genomic profiling of cancers for patients, clinical trials offering immunotherapies, as well as cutting-edge precision cancer therapies.

Research Flagships

Over the next five years, CALHN will further advance its capabilities as a national healthcare leader in all clinical discipline areas.

CALHN will invest in developing six research flagships that align to our current and future challenges and aspirations, including the ageing demographic, our commitment to equitable health care delivery to our disadvantaged communities, and the growing opportunities in personalised and precision medicine and artificial intelligence.

By definition a flagship cannot exist in isolation, only as part of the larger group. Described below, these research flagships set and signal the direction of research at CALHN. They will encourage collaboration between our own researchers and university partners and other leading health sector providers. Research effort in other areas continues to be important and is enabled by the broader CALHN ethos of enquiry and desire to improve patient outcomes.

Comprehensive Cancer Care

Under the aegis of the Adelaide Health Innovation Partnership¹, CALHN will play a leading role in establishing the Bragg Comprehensive Cancer Centre (BCCC). The BCCC will be the coordination lead site for cancer research, education and patient care in CALHN and the state. It will be an organisation where associated institutions work together so South Australians have access to optimal cancer care.

The BCCC will harness the unique strengths and research opportunities created by the new Bragg Centre for Proton Therapy, the SAiGENCI, South Australian Health and Medical Research Institute, Precision Cancer Medicine Theme (PCMT) and the CCB. The BCCC will coordinate research projects, clinical trials and educational opportunities that will deliver the best cancer care to our community. It will link in with centres in other jurisdictions as part of information sharing and collaborative research effort, as well as with the National Comprehensive Cancer Network.

¹Adelaide Health Innovation Partnership – members being CALHN, The University of Adelaide, South Australian Health and Medical Research Institute, and The Hospital Research Foundation Group.

Surgical and transplantation excellence

Grow expertise in head, neck, oral and skull-base surgery

CALHN's clinical teams (including skull-base surgical teams at the RAH) are among the best in the world for diagnosing and removing non-cancerous and cancerous growths from the skull base. Over the next five years, we will investigate how to improve early diagnosis and treatment of head and neck cancers.

World-leading transplant care

Leveraging off the nationally recognised Central and Northern Adelaide Renal and Transplantation Services (CNARTS), CALHN will continue to advance best practice transplant care, including pre- and post-transplant care. Over the next five years, we will seek to become a national and global leader of life-saving transplant services from pre-admission counselling to post-transplant outpatient care delivered in collaboration with research and academic partners. We will investigate opportunities for advancing Aboriginal-specific models of care and exploring opportunities to improve heart and lung transplant care.

We seek to improve the lives of South Australians with improved rates of both transplantation and outcomes by supporting research into early diagnosis and treatment. We will encourage participation of people in clinical trials of earlier diagnosis methodologies and work with our research partners to upskill in early diagnosis and the use of novel technologies and techniques.

Personalised medicine and patient-focused care

Personalised medicine – also known as precision medicine – involves consideration of a patient's biological and genomic data, as well as their lifestyle. Research into testing and translating advances in treating immune-mediated diseases has grown at a rapid rate over the past five years. CALHN disciplines including rheumatology, immunology, clinical pharmacology, pharmacy, and genetics already work in a collaborative partnership with The University of Adelaide to deliver increasingly effective and complex drug-based therapies. We will further such collaborative efforts while safely monitoring the development, delivery and response assessment of personalised medicine.

Excellence in Aboriginal² health

CALHN seeks to partner with Aboriginal consumers across many communities and language groups. We commit to collaboration at all levels (including health practitioners, tertiary education centres, medical research institutions, government and partner organisations) to work as a collective so that our services are informed by research evidence of different types.

CALHN is committed to establishing a Centre of Excellence for Aboriginal Health. With its Kaurna name gifted through the Kaurna Warra Pintyanthi group, Purruna Trruku (meaning 'wellbeing centre') this new initiative will be underpinned by Aboriginal knowledge. It will strive to inform and advocate for culturally appropriate practices within all levels of the South Australian healthcare system. By combining new and existing priorities with a strong governance structure provided by Aboriginal leaders from within partner organisations, Purruna Trruku will present opportunity for collaboration on a collective vision for improved Aboriginal health.

The reach of Purruna Trruku will be broad. It will focus on complex problems and development of innovative solutions, but will also cover more than bio-medical health. The centre will address the well-being of the person as a whole, ensuring their social, emotional and physical selves are cared for to reach a state of overall wellness.

Through exchange programs and joint projects with Aboriginal communities we anticipate important outcomes, including improvements in culturally-sensitive care delivery and research conduct, and the upskilling of Aboriginal healthcare employees and students.

CALHN's involvement in research will continue to adhere to the recommendations of The South Australian Aboriginal Health Research Accord (The Accord) and its nine principles by which Aboriginal health research in South Australia should be conducted.

²The term 'Aboriginal' also includes Torres Strait Islanders, as articulated in our Aboriginal Strategy.

Healthy ageing for South Australians

By 2056, one in four Australians will be over the age of 65. Older age is a risk factor for many chronic health conditions such as cardio-metabolic disease, neurodegenerative disease and diabetes. There is an urgent need to develop interventions that can extend our health span – that is, the period of life spent in good health.

CALHN's current research expertise spans a range of common diseases and modalities, from biomedical discovery to epidemiological studies. What's also vital is allied health research that examines the daily challenges people face as they age and seeks to assist people to live well across the life span. The Academic Health Science Network (detailed later in this strategy) will address the challenges of complex multi-morbidity and frailty in new and holistic ways.

With our partners, we have access to significant expertise in genetic and epigenetic determinants of health, cardio-metabolic health, cancer, ageing and frailty, and social and environmental risk factors. We will use our extensive expertise in endocrinology and gastroenterology research to implement novel approaches to address obesity and type 2 diabetes.

Intelligent health solutions

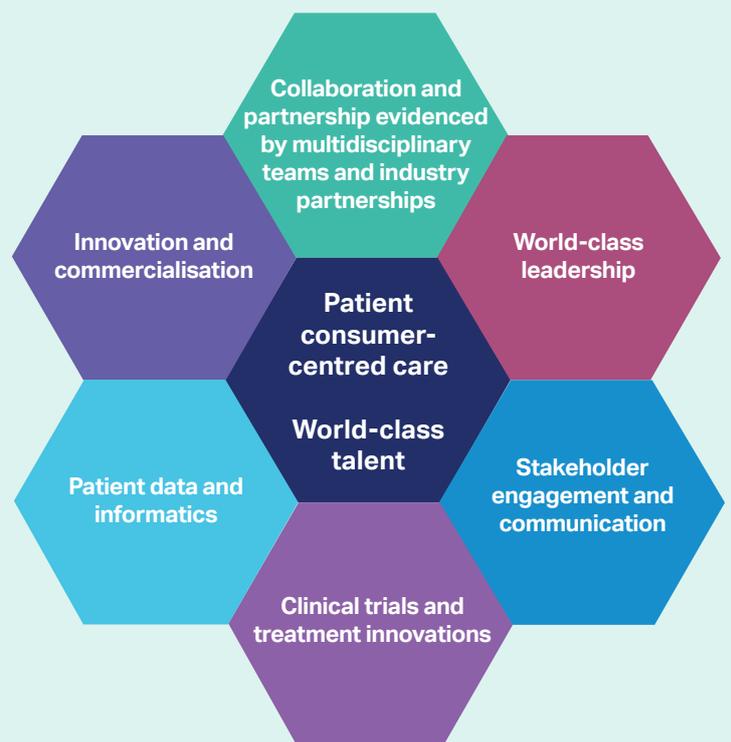
Artificial intelligence (AI) and machine learning (ML) offer exciting possibilities but require careful consideration and implementation. CALHN has a unique opportunity to become an internationally recognised destination for AI in health research, education and training, and applied clinical care, supported by industry investment.

Working with the university sector, relevant industry and other health networks, CALHN will enable evidence-driven decision making in the face of complex data, systems and solutions. It will enhance diagnostic capabilities within South Australia and transform personalised medicine by facilitating next-generation clinical trials, reducing costs, and influencing lifestyle behaviours.

Driving CALHN research

As a research-informed leading healthcare provider, CALHN will foster scholarship and a spirit of discovery and interrogation. This ethos will drive our research and actions over the 2023 – 2028 period. In turn, these actions will enable us to deliver on our research strategy and ambitions.

The conceptual model underpinning CALHN research and its work in the six Flagship areas is provided adjacent.





We collaborate and partner to drive research excellence in an academic health science network

CALHN will integrate research and education to create a highly respected Academic Health Sciences Network.

CALHN is part of the Adelaide Biomedical Precinct on North Terrace, offering shared research infrastructure and cross-disciplinary capacity. At present valued partners include:

- The University of Adelaide
- University of South Australia
- South Australian Health and Medical Research Institute (SAHMRI)
- Health Translation SA
- Centre for Cancer Biology (CCB)
- South Australian Immunogenomic Cancer Institute (SAiGENCI)
- Basil Hetzel Institute for Translational Health Research (BHI)

The precinct will be further enhanced by the nearby location of the Women's and Children's Health Network.

CALHN is not able to achieve its research ambitions alone. Our ongoing collaboration with The University of Adelaide and the South Australian Health and Medical Research Institute (SAHMRI) provides operational efficiency as well as a strategic approach to projects, trials and research within the precinct.

CALHN also integrates research, education and health care through meaningful engagement with stakeholders. Once established, the Academic Health Sciences Network will work closely with national and international allies to combine knowledge, ideas and expertise. The Network will assist our aims to attract and retain outstanding clinical research leaders and clinical scientists. Stimulating jobs growth, economic investment, and increased research grant funding in our state is also critical for the partnership.

As an Academic Health Science Network its aim will be to deliver respected research comparable to that generated by other academic health science centres in America, Britain, the Netherlands, Sweden, Japan and Singapore.

Our partners are not limited to those listed above. Improving partnership opportunities with South Australian local health networks will help to create new opportunities for all parties. Similarly, continued partnerships with the Commission on Excellence and Innovation in Health and Digital Health SA will help us to improve our ways of working in regards to research.

Areas of focus and priority

The Academic Health Science Network will invest in areas of discovery health research such as genomics, proteomics and bioinformatics. It has access to specialists in disciplines such as engineering, physics, chemistry, mathematics, computing, engineering, and social sciences.

CALHN and the Academic Health Science Network will:

- create a culture of scientific rigor based on a foundation of innovation and cooperation across specialties and institutions
- leverage the strengths of our precinct partners in basic science, technological capacity and cross-disciplinary research
- foster and establish new relationships with local, national and international institutions and partners to drive research impact and health improvements
- foster greater engagement with community consumers and stakeholders
- support opportunities for research exchange with precinct-wide research presentations, research days and workshops for researchers
- establish shared research priorities and opportunities and ensure priorities are aligned with the expectations of our consumers and stakeholders
- embed research in clinical care and develop a culture where research is seen as an essential service offered by CALHN.

How will we know we have achieved this?

In meeting our goals, at a high level we will see:

- integration of research, education and health care
- improved community health and wellbeing through increased knowledge and productivity
- better access to the latest innovations and treatments for our patients, by optimising our clinical trials platform
- research embedded in delivery of health care
- improved impact, efficiency, safety and quality of CALHN healthcare
- harmonious partnerships with industry, philanthropic and investment sectors.



We cultivate local and recruit world-class research leaders to drive clinical research and future-focused practice innovation

CALHN's research environment will support research participation, gender equality and career progression, along with opportunities for education and training for those who wish to pursue a research career alongside clinical work – across the multi-disciplinary team.

We will articulate researcher expectations and performance outcomes to allow time to perform research. We will encourage the active research participation of medical and other health professionals via the Learning Innovation and Leadership Institute (LILI – see below for detail). The Institute will play a vital role in training clinicians in translational skills that directly link research with patient care, including clinical practice improvements and audits.

CALHN will provide dedicated training in clinical research through a program endorsed by the National Health and Medical Research Council (Good Clinical Practice), along with ongoing education in clinical research skills. A new clinician researcher training pathway (Clinician PhD Pathway) offered (commenced in 2023) will also offer pre- and post-vocational training opportunities to develop a pipeline of clinician researchers for the future.

We will also focus on developing allied health researchers with structured research opportunities, formalised mentoring for grant application and development, research conduct and publication of outcomes.

Recruiting and retaining world-class research leaders

To meet our strategic ambition of being a place that attracts and grows world-class talent, we acknowledge that CALHN must:

- create a durable platform to support the education and training of current and future clinicians in all fields, and researchers
- support clinicians and research leaders already working for us
- attract outstanding clinician researchers and scientists to Adelaide.

Through partnerships with universities, CALHN will:

- ensure future capability for key health, medical and allied health research leadership roles
- offer opportunities for early and mid-career clinician researchers across all discipline areas, including allied health
- develop a state clinician researcher training pathway (MD/PhD program)
- provide pre- and post-vocational training opportunities to develop a pipeline of multi-disciplinary clinician researchers for the future
- identify and appoint young clinicians of exceptional academic potential.

CALHN will invest in creating an environment and a culture that values research and recognises that research is fundamental to the delivery of excellent clinical care and the implementation of new practice.

Learning Innovation and Leadership Institute (LILI)

Aligned with our vision and ambition to attract and grow exceptional talent, CALHN will establish LILI. Like similar entities elsewhere (such as the Michener Institute of Education, the Cabrini Institute or the Monash Partners Academic Health Science Centre), LILI will integrate clinical practice, research and learning, plus promote strategy and innovation that will deliver better healthcare and health outcomes in South Australia.

Through LILI, CALHN will implement a whole-of-CALHN leadership development framework that places a focus on identifying and building the capabilities of effective leaders, succession planning and talent mapping.

Areas of focus and priority

CALHN and LILI will:

- embed a clinical research culture among all clinical units
- hold annual research showcase events
- establish a program of research leadership and scholarship
- increase investment in training and mentoring for emerging researchers and the development of clinician-scientists career pathways with our partners
- provide more postgraduate research opportunities
- attract students, postdoctoral researchers and clinician scientists
- support our early to mid-career researchers through quality supervision and mentorship
- retain and develop the best researchers at all levels by providing clear career pathways
- facilitate an academic environment allowing interaction between basic and clinical scientists
- engage with the community, research partners and funders to identify unmet clinical problems to be answered at a local, national and international level.

How will we know we have achieved this?

High level outcomes will tell us we have achieved our aims, including:

- excellence and continuous improvement in health care created by integrating and coordinating clinical practice, research and learning across CALHN and partners
- effective leaders identified and developed through effective succession planning, talent mapping and mentoring
- focus areas identified to future-proof our health workforce
- subject matter experts helping to achieve elevated clinical outcomes (such as in information technology, biomedical engineering and health informatics).



We engage with our community and support the needs of our researchers to achieve optimal research performance and health industry visibility

We must attract and retain the right staff and leaders who promote and foster inquiry and culture of partnership – within CALHN and with other organisations or individuals.

CALHN will further reshape the research function by supporting better integration of research services between CALHN, SAHMRI, and The University of Adelaide. A Director of Research has been appointed, and leads the Research Services Office with a focus on customer service and research excellence.

A high-functioning Research Services Office

South Australia needs a suitable research support model to develop the scope and quality of research in CALHN, performed in a well-calibrated and appropriately funded Research Services Office (RSO).

The invigorated RSO aims to be an efficient support system that takes on the best advice from the 2021 KPMG evaluation. We have a strong focus on strategic alignment of clinical target areas and commercial opportunities to drive research excellence. Partnerships and collaborations will be essential as the RSO services increasing research at CALHN. We know that researchers expect efficient management of ethics approvals and governance processes, grant submissions and management, site-specific assessments, quality management, researcher education and support, clinical trials design and management as well as biostatistics and epidemiological support functions.

A cultural change program is underway in the RSO that will use clear communication frameworks (such as a revised online presence, regular research bulletins and better consumer engagement) to pair with technology systems that support efficient research governance.

CALHN will acquire and maintain enabling technologies and research infrastructure to realise this work.

Research infrastructure and 'enabling' technology, including biorepositories and registries

Conventional medical specialities and techniques, such as biochemistry and histopathology, will soon be irreversibly changed by developments in genomics, proteomics and metabolomics. The availability of such technology, as well as the critical mass of knowledge and human resources that underpin technological advances, will be essential for clinical and research outcomes. Investments in infrastructure within the precinct have supported this transformation.

Over the past decade, CALHN and partners have developed several local and national biorepositories and registries such as the:

- South Australian Cancer Research Biobank
- Brain Cancer Biobanking Australia
- Australian Prostate Cancer Bioresource and registries
- Myeloma and Related Diseases Registry
- Coronary Angiogram Database of South Australia (a registry of patients undergoing coronary angiography in the state)
- South Australian Clinical Cancer Registry
- South Australian Prostate Cancer Clinical Outcome Collaboration
- South Australian Birth Defects Registry
- Australian Cardiac Outcomes Registry
- Australian Spinal Cord Injury Registry
- Orthopaedics Joint Replacement Registry
- Australian New Zealand Clinical Trials Registry
- Registry of Senior Australians
- Australian Corneal Graft Registry
- Dental Implant Registry.

CALHN Research Innovation and Implementation Committee (CRIIC)

Defining our research priorities requires an analysis of current research strengths, promising growth areas and clinical services that require further development. To achieve this, the strategic body CRIIC will provide oversight and advice on CALHN research projects and directions. It will also oversee the implementation of CALHN's Research Strategy. An implementation plan will be drawn up and endorsed by the CRIIC in the first 12 months of this Strategy being released.

The CRIIC will identify teams with sufficient critical mass to deliver highest impact and competitiveness in major research funding opportunities, such as the Medical Research Future Fund, Bill and Linda Gates Foundation and Wellcome Trust. The CRIIC will develop a cohesive strategy, emphasising the importance of clinicians and consumers being involved in clinical trials and clinical research. Opportunities for research commercialisation will be maximised.

Sharing leading research with the world

We will enact a Research Strategy-aligned communications strategy to promote our research and our staff as world leaders in their field. The strategy will also share the health benefits and economic value our work delivers.

We want researchers to feel valued and proud of their association with CALHN, while also giving community members opportunities to engage with researchers talking about their contributions to better health outcomes. Through an externally-focused strategy, CALHN will host events to engage the public, industry stakeholders and other researchers, highlighting the research conducted across our network.

Areas of focus and priority

CALHN and partners will:

- deliver a high-functioning RSO geared to support stakeholders
- improve research governance, support functions and infrastructure for better efficiency
- embed clinical research culture among all clinical units
- establish the CRIIC to develop a CALHN-wide research focus and help implement the CALHN research strategy
- develop new technologies to enhance information sharing and better ways of collaborating
- implement digital technology to enhance research oversight and management
- implement a new research communication strategy.

How will we know we have achieved this?

Success in achieving our goals will be evidenced by:

- improved research governance, support functions and infrastructure to support research
- elevation of CALHN's research profile through publications, translation, leadership and engagement with the community
- embedding of a culture of research into programs
- better engagement and connection within CALHN and with partners regarding research
- tangible improvement in the lives of patients and in population health.



We increase access to the latest innovations and treatments for our patients to improve health outcomes and access to clinical trials

Why clinical trials are important

Clinical trials are fundamental to making new discoveries and bridging the space between discovery science/technology and patient care and outcomes. Through clinical trials, we will develop and test new diagnostic procedures, new drugs or devices or apply technology in new ways to treat disease or illness. A vibrant clinical trials platform will also create other benefits, such as improving revenue and industry reputation for our network and partners.

All clinical trials are required to have ethics and governance approval. The establishment of a CALHN-wide Research Governance Committee will oversee research conduct and ensure Human Research Ethics Committee (HREC) and other agency requirements are met. The National Commission for Safety and Quality in Health Care conducted National Standards for Clinical Trials in 14 trial sites – one of which was CALHN being trialled at the RAH and TQEH. When implemented, these standards will provide further assurance that clinical trials will be nationally uniform, following best practice models of care.

Formation of the Adelaide Clinical Trials network (ACTN) and Adelaide EpiCentre

CALHN will optimise a best practice clinical trials platform to drive the design, delivery and transformation of clinical trials in South Australia.

This strategy aims to improve performance of our clinical trials ecosystem by working with precinct partners and industry for better process reliability and efficiency. We will be a founding contributor to the Adelaide Clinical Trials Network (ACTN). This network will create agile research partnerships and work closely with the Department of Health and Wellbeing to:

- implement a standardised patient pre-consent process
- help recruit research participants into clinical trials
- implement clinical investigator training.

In addition, the network will increase the number of clinical trials conducted by CALHN researchers. This platform will supervise the design, delivery, and transformation of clinical trials. ACTN will develop and implement the goals listed above, as well as developing:

- robust, digital tools, ethics and rigorous governance processes
- infrastructure and resources that support day-to-day functions
- processes for initiating, conducting and monitoring clinical research.

Adelaide EpiCentre

A dedicated centre of clinical epidemiology and data-driven service planning will be established through state-of-the-art health informatics and biostatistics, health economics and epidemiology leadership, delivered through Adelaide EpiCentre.

The Adelaide EpiCentre will operate within the realm of health services research, which looks at population access to, cost, efficiency and efficacy of health services. It considers the skills required to better translate research 'from bench to bedside'.

Adelaide EpiCentre will be a collaborative research centre that supports high quality clinical, non-clinical and biostatistical methodological studies. The centre will assist with clinical study design, including:

- developing protocols
- identifying and selecting primary and secondary desired outcomes
- conducting comparative power and statistical analysis
- developing statistical analysis plans for safety and efficacy reporting and clinical reporting
- developing and managing a central clinical database
- assisting to develop an electronic case report form
- developing and managing an electronic study database and arranging web-hosting
- training project research staff
- conducting randomisation services
- developing and managing data safety and monitoring committees.

Adelaide EpiCentre will work closely with JBI (formally the Joanna Briggs Institute), founded at the RAH more than 25 years ago. JBI is now based at The University of Adelaide and is recognised as an international research organisation for evidence-based health information, software, education and training.

Adelaide EpiCentre encompasses practices of improvement science in clinical care delivery, which are focused on better systems, processes (and health outcomes), as well as implementation science.

Areas of focus and priority

The Adelaide Clinical Trials Network and EpiCentre will:

- optimise the system for ethical and governance approval among the Adelaide BioMed City collaborators
- implement an optimised research workflow platform and clinical trial management system
- enhance consumer engagement and support research recruitment by establishing a consumer advisory council for research
- implement the National Standards for Clinical Trials and embed this into CALHN Clinical Governance Framework
- increase awareness and build capacity of support services for investigator-led clinical trials, including medical, nursing and allied health-led research, and increase the number and quality of investigator-led trials in Adelaide BioMed City
- facilitate the sharing of resources, including documents, standard operating procedures and teaching and training
- attract more commercially sponsored trials
- support evidence synthesis, implementation science, and impact evaluation as central to all research questions
- adopt National Mutual Acceptance for ethics approval for multi-centre clinical drug trials so that clinical researchers only require ethics approval once, and that approval is accepted by all participating institutions.

How will we know we have achieved this?

Achieving our priorities will create:

- greater patient access to the latest treatments and new therapies
- more patients participating in clinical trials
- increased economic development in this area of growing need and opportunity
- increased international competitiveness, attracting sponsored clinical trials by minimising sector fragmentation and duplication, increasing CALHN competency and efficiency
- revenue growth for South Australian health services
- streamlined and timely ethics and governance processes, creating more success in meeting participant recruitment targets and completing trials within agreed timeframes
- improved accuracy in data collection and a process for reporting clinical trial performance across the state



We harness patient data and use informatics and multidisciplinary research and science to deliver innovative solutions to long-standing problems

Health and biomedical data improve healthcare delivery, safety and quality of care

Ethically harnessing the power of patient data and informatics will be at the core of CALHN's research success. We need effective population-based, inter-jurisdictional data linkage, including socio-economic, employment, education, and criminal justice data being linked with health systems data. This will help us understand the role and impact of the social determinants of health.

To make best use of the revolution in data analysis, CALHN will collaborate with the Australian Institute for Machine Learning (AIML) at The University of Adelaide. Convergence science – that is, integrating knowledge, methods and expertise from different disciplines and forming new frameworks to catalyse scientific discovery – is a key strategy. We will seek out linkages in the fields of physics, chemistry, mathematics, computing, engineering and social sciences to help us deliver innovative solutions for health services, biomedical engineering, precision medicine, genomics and social research.

Using 'big data' to deliver health solutions

We will harness the power of this diverse data to answer the 'big research questions'. Patient data, informatics, and convergence science capability all play an important role in delivering innovative health solutions. This data informed approach will improve overall public health.

CALHN's Electronic Medical Record (EMR) is the most comprehensive record system in Australia, but it does not currently support health and medical research. EMR does not identify patients involved in clinical trials or research projects, nor does it deliver project data or patient consent to participate in research.

The EMR information and other digital health services data could benefit CALHN and the state in multiple ways, such as:

- assisting us to evaluate care delivery
- giving us the opportunity to rapidly interrogate data at scale
- improving capability for clinical trial feasibility assessments
- providing us real-time data on clinical trials
- assisting patient recruitment to clinical trials/ research studies
- contributing to goals to standardise care, create a harmonised platform for health services research and reveal commercial opportunities for CALHN.

Our network faces challenges here, including access to shared data that is high-quality, in the correct format, and available in a timely manner. Data and technology are currently not standardised, and valuable clinical information remains hidden in the EMR. There are also insufficient bioinformaticians, biostatisticians, mathematicians, computer scientists and engineers with transdisciplinary knowledge who understand biology and clinical principles and concepts.

A scalable platform technology is critical too, with the right analytical tools and informatics researchers to retrieve, analyse, integrate, visualise and interpret data and information.

Machine learning and data linkage

Health and biomedical data will improve the coordination of healthcare delivery and the safety and quality of patient care.

The Australian Institute for Machine Learning (AIML) conducts globally competitive research and development in machine learning, artificial intelligence, computer vision and deep learning. In collaboration with AIML, CALHN will identify key problems requiring data-based solutions. AIML will provide expert algorithm development capabilities for a collaborative and supportive research environment.

We also work with the SA/NT DataLink, which provides data linkage services for research, policy development, service planning and evaluation. SA/NT DataLink provides the infrastructure and access to accurate and unbiased information held by government agencies and other organisations. This allows population researchers to collaborate within and across jurisdictions. The de-identified data linked for large or entire populations represent inclusive, representative, and unbiased datasets to better understand and monitor the population health and wellbeing impacts of policy and investment decisions.

Areas of focus and priority

CALHN and partners will:

- work with the South Australian Government to develop state privacy legislation to address the need for access to patient-related data
- collaborate for access to public health system data for state universities and SAHMRI
- build online capability for partners to access all forms of public health and patient data
- improve the coordination, integration and use of health and biomedical data, information and knowledge
- establish a digital health strategy and identify opportunities to integrate new technologies into the EMR.

How will we know we have achieved this?

Achieving our priorities will lead to:

- patients being empowered and better informed
- new biomarkers being developed through top quality genomics research
- timely evidence created to inform public health, policy and clinical decision making
- transdisciplinary researchers being better equipped to address the challenges faced in genomics, biomedical engineering and health services research
- health and medical research data applied to assist policymakers to improve the coordination of health service delivery (continuity of care, safety and quality of care, population health management)
- pharmaceutical companies working with us to improve patient stratification in clinical trials
- development of new clinical applications, medicines, devices and diagnostics.



We apply innovation and discovery to improve practice and commercial success that creates economic opportunities

CALHN will integrate research, innovation and healthcare delivery to support the rapid translation of research findings.

Collaborations between CALHN, research organisations and industry are essential building blocks in driving innovation in health, leading to more efficient translation of research. Translating our research into leading-edge medical technologies and treatments is essential to create timely translation of innovation into both health benefits and commercial advantage.

We must engage and collaborate with our peers and with industry. With assistance from CALHN's commercial partner AusHealth, researchers will be supported to develop life-changing innovations leading to investment and CALHN capability improvements as well as suitably protecting our intellectual property.

AusHealth will provide proof-of-concept funding towards developing intellectual property as we achieve commercial milestones. Together, we will build a business development pathway that includes identifying licensees and strategic industry partnerships. CALHN researchers have been at the forefront of innovation, exemplified by commercial successes such as ApoMab and Biomebank. Our network already undertakes early-phase clinical translational work with partners, and we will expand these relationships to grow research at CALHN.

Working with industry and other governments

We want to increase engagement and collaboration between researchers and industry. With assistance from our commercial partner AusHealth, research will help us build a business development and path-to-market strategy, including identifying licensees and strategic industry partnerships.

CALHN has greater incentive to collaborate with industry through opportunities available in Australian Government programs (such as MTP Connect) and state government programs (such as Department for Trade and Investment and Adelaide Bio-Med City Intermediary program).

To support the development of state health and medical research and the associated industry sector, the SA Department for Trade and Investment created the Health and Medical Industry Ministerial Advisory Panel. This panel provides advice to the government on the sector. A sector plan identified an initial three enablers for growth that CALHN contributes to:

- the Industry Connectivity Initiative
- clinical trials – through the SA Health Clinical Trials Portal
- the 'ageing well' and care sector.

Areas of focus and priority

CALHN and partners will:

- support translational research through engaging clinicians, patients, academic partners and industry
- develop programs in innovation and entrepreneurship to better equip research and clinical workforce to better understand the needs of industry and increase the translation of research outcomes into marketable health solutions
- stimulate CALHN researcher-industry engagement by making our research capabilities and infrastructure more visible
- increase our ability to leverage funding from industry and governments
- leverage industry investment to increase the success rate of early-stage innovation on the commercialisation path
- develop research streams within CALHN that complement industry needs.

How will we know we have achieved this?

At a high level, we will see that:

- 'CALHN ideas' are accelerated and promoted to industry
- contributions from the investment and philanthropic sectors are maximised
- success in competitive grant and industry funding is maximised
- patients' data are secured and return on investment is maximised
- international health partnerships and opportunities are fostered
- more markets, nationally and internationally, are reached
- spin-out companies that offer value to CALHN are created.

Tracking our success

CALHN will develop an implementation plan to support this strategy. The plan will describe the key actions and deliverables under each theme over the five-year period.

Implementation of the strategy will be incorporated into CALHN's governance framework, monitored, and reported on every six months. Progress reports will provide a summary of achievements recorded with success measures.

This process will enable an agile approach to implementation. We will adapt any actions not on track and further advance priority actions. We will use clear measures of success and closely monitor progress, along with our already extensive range of clinical and operational performance measures.

We will track progress for a smaller number of measures that help us to see the bigger picture of our performance.

This strategy's key performance indicators will be reported annually in CALHN's Quality Account.

The CALHN Executive Team is responsible for implementing this strategy by monitoring progress against the success factors and regularly reporting to CALHN's board.

This strategy will guide research priorities and research speciality plans.

**Shaping the future of health
with world-class care and
world-class research.**



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Health

Central Adelaide
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