

# Research and Artificial Intelligence

1-2 June 2023



QUEENSLAND  
**CLINICAL SENATE**

*Clinician leadership. Consumer Collaboration. Better Care.*



**Queensland  
Government**

Meeting report: 'Research and AI'

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# Why do we need to invest in research?

Imagine a healthcare system without research. A system in which we could offer no new treatments or therapies, vaccines or drugs. A system in which we continue to do what we've always done.

Research gives us hope for better ways to provide care and better outcomes for our patients.

So many of our patients rely on clinical trials to improve their health, save their life, or give them a few more months, even years, with their loved ones.

Research is vital and I am delighted that the Senate dedicated an entire meeting to why research deserves a great deal of focus in the health system and how we can streamline our processes, better integrate research into our 'business as usual' and, when successful, translate it into clinical practice.

With so much reform underway within our health system, this was the right time for the Senate to invite clinicians, consumers and healthcare leaders to the table to talk about the future of research and also the role of Artificial Intelligence. I congratulate everyone involved in these important discussions and the many discussions that will come from the Senate recommendations.

What we do now will make a difference for generations to come. So, let's give research the attention and time that it deserves so that we can make a difference to the lives of Queenslanders now and in the future.

## **Colleen Jen**

Deputy Director-General

Clinical Planning and Service Strategy



# Chair's report

So much of what we take for granted in healthcare today is a result of the research and innovation of yesterday.

In my clinical work as an anaesthetist, the reason we have modern anaesthesia with a better patient experience and a reduced risk profile, is because of ongoing research and understanding in that area. Gene-based treatments and immunotherapy are gamechangers in the health system, but they only happen with research.



In every area of our clinical work there are examples of advancements because of research.

As healthcare providers, we all appreciate the complex environment in which healthcare is delivered and why then it can be challenging to translate research and innovation into practice. We also appreciate that consumers want access to research and clinical trials and the difference this can make to their lives.

This is why the Queensland Clinical Senate shone a light on the importance of research in the Queensland healthcare system. We focused on the lifecycle of research within health in Queensland. And we looked at research equity, a whole of system approach and how we can streamline the flow of research from idea conception to integration of the 'new' into the everyday clinical situation in a way that is safe while also maximising the benefits that come with it. We also explored the role of artificial intelligence (AI) and machine learning as they become increasing part of the picture and the need for an AI Framework in Queensland.

We also focused on First Nations research and I want to acknowledge First Nations researchers. If research is critical for our future, then First Nations led research must be paramount. We heard from First Nations researchers leading in areas such as AI, sepsis and equity. Our recommendations seek to strengthen First Nations Research here in Queensland.

We also explored the role of universities and industry partnership in relation to research and innovation and how we play to our strengths and maximise the opportunities that come from partnerships. A number of our recommendations focus on partnerships.

I look forward to sharing our recommendations broadly across the health system and beyond and working together with our many partners for something that is beyond us, something that is in our future, which is better care for all of Queensland.

**Dr Tanya Kelly**

Chair

Queensland Clinical Senate

# Principles

## Research principles

- Research is core to the improvement of healthcare and healthcare systems, and accordingly, support for research should have priority when considering the competing demands and risks within the system.
- As ultimate funders and recipients of research, meaningful system level consumer influence and involvement, throughout the research ecosystem (at a strategic and project level), will result in research that is focused on better outcomes for the community.
- First Nations leadership and partnership is essential for all First Nations related research. First Nations considerations and, where relevant, consultation is essential for all research. Research must adhere to the ethical guidelines for research with Aboriginal and Torres Strait Islander peoples, consistent with World Health Organisation (WHO) and National Health and Medical Research Council (NHMRC) requirements.
- Research partnerships should always support research equity and scalability and leverage our capability.

## AI principles

- The benefits of AI in delivering better outcomes in line with the quintuple aim\*, are recognised, and will only be realised through careful, safe and supported adoption.
- Our approach to AI should engage our community and reflect ethical values of equity, diversity and inclusion, protect our human rights and foster trust.

*\* The Quintuple Aim is a framework for healthcare that aims to improve the patient experience, population health, cost efficiency, the work-life of healthcare provider and health equity.*

# Queensland Clinical Senate Research and Artificial Intelligence Recommendations

## Research Recommendations

### Partnerships

- 1 Develop a partnership framework for fostering a collaborative research culture with a federated approach across the state, codesigned with consumers, that also recognises the local context.
  - a. Facilitate and support standardised research partnerships across our HHSs to enable better visibility, collaboration and streamlining of research processes, and which are reflected in HHS Service Level Agreements.
  - b. Within research partnerships ensure that regional, rural and remote, along with primary care researchers are enabled, through capacity building, to play a significant and material role in research.
  - c. Ensure partnership and consultation with First Nations peoples at all stages of the research process.
  - d. Grow and sustain strategic partnerships with research organisations and industry, that deliver greater equity and better health outcomes for our community.
  - e. Support a state-wide approach to roles that enable partnership with research organisations, such as conjoint appointments and adjunct titles, where appropriate.

### First Nations Leadership

- 2 Ensure First Nations considerations in the development of governance and processes, for all research, including leadership, consultation and data sovereignty.
- 3 Support equitable, First Nations led, First Nations researcher career pipelines and pathways.

### Consumer participation

- 4 Support and facilitate processes to enable consumers and those with lived experience, to be meaningfully involved early in codesign of research. This includes support to be active and equal contributors across the research cycle, with lived experience valued as an essential skillset within the multidisciplinary research team.
- 5 Support and recognise consumer led research in policy-making and clinical care.
- 6 Enable access to information and outcomes from research for research participants.

### Streamlined processes

- 7 Processes to enable research should be streamlined within a networked state-based approach, so that important research can be undertaken promptly and efficiently.
  - a. Multi-site study research governance processes should be supported, with mutual recognition of approval decisions by participating HHSs, whilst retaining the ability of HHSs to assess site specific factors.
  - b. Data access and approval processes should be streamlined, supported by mutual recognition or consolidation of approval decisions by participating HHSs, where appropriate.
  - c. Data custodians should be informed and supported to understand their roles and responsibilities and feel confident to enable sharing, where appropriate, in a consistent and timely way across the state.
  - d. Support and invest in digital systems and processes to facilitate a networked state-wide workflow for ethics and governance decisions.

### Dynamic consent

- 8 Trial and evaluate dynamic consent models in Queensland to better support consumer choice and participation in research.

### Synthetic data

- 9 Synthetic data should be supported as a preliminary tool within the data research pipeline, where appropriate, to better enable early research whilst preserving consumer privacy.

## AI Recommendations



- 10 Develop an overarching AI framework for Queensland Health, with pathways for development and implementation, including a community advisory function.
  - a. Recognise the data and system requirements for AI development and implementation and define robust and streamlined data governance processes
  - b. Enable and ensure, locally relevant validation of AI algorithms, prior to implementation.



### Research in healthcare

Research has made a significant contribution to healthcare, it has contributed to increased life expectancy among the overall population and improved outcomes for specific groups of people.

The conduct of research in healthcare facilities correlates with lower mortality rates and better-quality care.

### Artificial Intelligence

The benefits of AI in delivering better health outcomes will only be realised with careful, safe and supported adoption that engages the community and reflects ethical values of equity, diversity and inclusion, protects human rights and fosters trust.





## Introduction and background

The Queensland Clinical Senate hosted the 'Research and AI in Healthcare' meeting to shine a light on the importance of research innovation in healthcare.

Research is vital in healthcare. Yet, because we are so busy delivering all important services 24 hours a day, 365 days a year, research often doesn't get the attention it deserves.

But the fact is, healthcare is not just about service delivery. If you just do service delivery in healthcare, you will always do what you've always done. In fact, high levels of research activity within a healthcare organisation, are a predictor of high health service performance in general.

Healthcare is evolving all the time as we understand things more, develop more insights and better ways of working, develop greater interventions, investigations and treatments.

We also need to further leverage the investments that Queensland has made in electronic health records and data, to grow these insights. We need to be able to make sure that we can incorporate all of this 'new' into the way we understand healthcare and into healthcare provision in an efficient and permissive way but also in a way that manages the risks and protects privacy.

As healthcare providers, we all appreciate the complex environment in which healthcare is delivered and why, then, it can be challenging to translate research and innovation into practice.

Queensland Health's Research Strategy - currently in draft format - outlines research as one of the priorities for Queensland Health, so that research is embedded in clinical planning and workforce development.

# The case for research in a healthcare system

Research is an important component of healthcare, enabling innovations and enhancements in population health and healthcare delivery including as more effective, safer and better tolerated treatments.

At a population level, research has contributed to increased life expectancy. Research that has led to awareness and advances in areas such as smoking, vaccinations and medication management has resulted in an increase in life expectancy equivalent to an additional 3 months of life per year over the past 60 years (Dattani et al, 2023).

At an individual disease and patient level research has made a significant contribution to survival rates. Over 70 years ago Farber et al (1948) reported early success in treatment of acute leukaemia in children. Over the decades since then, many small steps have led to chemotherapy regimens that have increased 5-year survival rate for acute lymphoblastic leukaemia from 0 to 80%.

Importantly, research enables comparison of new therapeutic options with existing treatments to ascertain if new innovations are better or worse. Djulbegovic et al (2000) demonstrated that for multiple myeloma, in 18 out of 136 randomised trials, new treatments were less successful than existing therapies.

Research and practice should happen together. Progress requires innovation and evaluation. Successful innovation requires research evaluation to allow us to find out what works and what doesn't.

Research has benefits for health care organisations. In the National Health Service a higher number of patients in clinical trials correlates with lower standardised mortality and better quality care ratings (Jonker & Fisher, 2018).

Finally, we can and should improve the research process. The success of COVID vaccines and treatments taught us that this is achievable (Tikkinen, 2020). Current challenges in research such as grant application processes, research approval processes and recruitment have the potential to be streamlined by getting rid of the time doing "a lot of nothing" (Gallagher, 2020). Establishing trial networks and infrastructure can be enablers for enhancing research trials.

The benefits of healthcare research to both populations as a whole and to individual disease cohorts are evidence that research should be considered part of the standard way we do practice.



# The meeting

The two-day meeting on 1-2 June 2023 was attended by more than 160 Senate members and guests.

As part of, and in addition to the general Senate membership, representation included:

- Australian Primary Health Care Nurses Association
- Bond University
- Community Pharmacy
- CSIRO Australian e-Health Research Centre
- Department of Health
- Griffith University
- Health Consumers Queensland
- Health Translation Queensland
- Health and Wellbeing Queensland
- Mater Health
- Murri Watch
- Queensland Ambulance Service
- Queensland Clinical Networks
- Queensland Health Office of Research and Innovation
- Queensland Health Reform Office
- The Institute for Urban Indigenous Health, and
- The University of Queensland.

The recommendations from this meeting are advisory and represent a collation of clinical and consumer views and experiences. They are intended to provide advice and complement other activities within the system, both internally and externally to Queensland Health.

\*\*See website for meeting agenda

<https://clinicalexcellence.qld.gov.au/priority-areas/clinician-engagement/queensland-clinical-senate/meetings/research-and-artificial>



## Next steps

The recommendations in this report have been endorsed by Queensland Health's Executive Leadership Team. The Senate will seek updates on the implementation of endorsed recommendations to keep members and other interested parties informed of progress and provide further input into bodies of work as appropriate.

To find out the progress of these recommendations, please contact the Senate Secretariat via email on [qldclinicalsenate@health.qld.gov.au](mailto:qldclinicalsenate@health.qld.gov.au).



## Speakers and special guests

Dr Helen Brown, Deputy Director-General, Clinical Excellence Queensland, Queensland Health

Dr Victoria Campbell, Chair Queensland Digital Early Warning Tools Steering Committee, Patient Safety and Quality, Clinical Excellence Queensland, Queensland Health

Anja Christoffersen, Disability Advocate and Consumer Representative

Aaron Davis, Director Research and Innovation, Office of Research and Innovation, Queensland Health

Megan Fairweather, Chief Legal Counsel, Queensland Health

Lesley-Anne Farmer, Deputy Secretary, Health Products Regulation Group, Therapeutic Goods Administration

Carl Francia, Physiotherapist, Metro North Hospital and Health Service, Queensland Health / Associate Lecturer in Physiotherapy, The University of Queensland

Prof Paul Glasziou, Director, Institute for Evidence Based Healthcare, Bond University

Dr Kim Greaves, Senior Medical Officer Staff Specialist, Cardiology, Sunshine Coast Hospital and Health Service, Queensland Health

Dr David Hansen, Chief Executive, Australian e-Health Research Centre, CSIRO

Kaye Hewson, Director, Australian Teletrials Program, Office of Research and Innovation, Queensland Health

## Speakers and special guests continued

Dr Bec Jenkinson, Research Fellow, University of Queensland

Vikrant Kalke, First Nations AI Research Manager, Metro North Hospital and Health Service, Queensland Health

Dr Paul Lane, Director, Medical Services, Redcliffe Hospital, Metro North Hospital and Health Services, and Digital Sepsis Clinical Lead, Clinical Excellence Queensland, Queensland Health

Kirsten Law, Director, Legislative Policy Unit, Department of Health

Kirsty Leo, Assistant Nursing Director, Aboriginal and Torres Strait Islander Health, Metro North Hospital and Health Services, Queensland Health

Dr Emma McCahon, Health Service Chief Executive, Mackay Hospital and Health Service

A/Prof Andy Moore, Senior Medical Officer Oncology and Director Clinical and Biomedical Research, Queensland Children's Hospital Centre for Children's Health Research

Dr Stevie Perks, Clinical Education and Research Pharmacist, Townsville Hospital and Health Service, Queensland Health

A/Prof Bernadette Richards, Associate Professor Ethics and Professionalism / Integrity Officer, Medical School, The University of Queensland

Prof Claire Rickard, Professor of Infection Prevention and Vascular Access, Royal Brisbane and Women's Hospital, University of Queensland Centre for Clinical Research

Dr Fiona Russo, Chair, Family Centred Committee, Children's Health Queensland Hospital and Health Service, Queensland Health

Prof Sabe Sabesan, Clinical Director of Queensland Regional Clinical Trial Coordinating Centre, Office of Research and Innovation, Queensland Health

A/Prof Clair Sullivan, Director, Queensland Digital Health Centre, The University of Queensland

Dr Anton Van Der Vegt, Advanced Queensland Industry Research Fellow, Centre for Health Services Research, The University of Queensland

Peter Westwood, Manager, Townsville Research, Townsville Hospital and Health Service, Queensland Health

# Meeting Organisers

Dr Tanya Kelly, Chair, Queensland Clinical Senate

Adj/Prof. Chris Raftery, Deputy Chair, Queensland Clinical Senate

Roslyn Boland, Queensland Clinical Senate Executive member and Nurse Unit Manager, Primary and Community Care, Roma, South West Hospital and Health Service

Dr Victoria Campbell, Clinical Lead, Queensland Health Digital Early Warning Tool Steering Committee

Dr Marlow Coates, Queensland Clinical Senate Executive member and Executive Director of Medical Services, Torres and Cape Hospital and Health Service

Aaron Davis, Director Research and Innovation, Office of Research and Innovation,

Dr Kim Greaves, Senior Medical Officer Staff Specialist, Cardiology, Sunshine Coast Hospital and Health Service, Queensland Health

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Prof Alison Mudge, Clinician Researcher, Royal Brisbane and Women's Hospital, Metro North Hospital and Health Service

Dr Donald Mackie, Executive Director of Medical Services, Cairns and Hinterland Hospital and Health Service

John Prins, Executive Director, Health Translation Queensland

Prof Sabe Sabesan, Clinical Director of Queensland Regional Clinical Trial Coordinating Centre, Office of Research and Innovation, Queensland Health

Prof Ian Scott, Chair, Queensland Clinical Networks Executive

Jo Smethurst, Project Officer, Health Consumers Queensland

Dr Kellie Stockton, Queensland Clinical Senate Executive member and Director of Allied Health, Metro North's Surgical, Treatment and Rehabilitation Service

A/Prof Clair Sullivan, Director, Queensland Digital Health Centre, The University of Queensland

Dr Zephania Tyack, Health services researcher and implementation scientist at the Australian Institute of Health Services Research (AusHSI), School of Public Health and Social Work, and Centre for Healthcare Transformation, Faculty of Health, QUT.

Dr Anton Van Der Vegt, Advanced Queensland Industry Research Fellow, Centre for Health Services Research, The University of Queensland

Dr Nic Waddell, Group Leader, Medical Genomics, QIMR Berghofer Medical Research Institute

Peter Westwood, Manager, Townsville Research, Townsville Hospital and Health Service, Queensland Health

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