THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

AI in Healthcare
Queensland Digital Health Centre

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Acknowledgement of Country

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.

The Brisbane River pattern from *A Guidance Through Time* by Casey Coolwell and Kyra Mancktelow.

Overview

- The Queensland Digital Health Centre (QDHeC) is the engine room of our digital healthcare future.
- An enduring, world-class virtual facility with a self-sustaining group of high-quality researchers.
- Generating new research and innovation and speeding up translation of new knowledge into improved digital healthcare.
- Funded through The University of Queensland's Vice-Chancellor's Health Research Accelerator (HeRA) initiative.

Our vision

Our vision:

- a digitally enabled Learning Healthcare System
- that delivers on the Quadruple Aim of healthcare

Digitally enabled Learning Healthcare System

A digitally enabled Learning Healthcare System uses routinely collected data and patient experience to continuously monitor and improve healthcare outcomes.

That means we use technology to capture and analyse information about every patient encounter to improve the care for that patient in that moment, for other patients into the future, and for the broader population.

Technologies include:

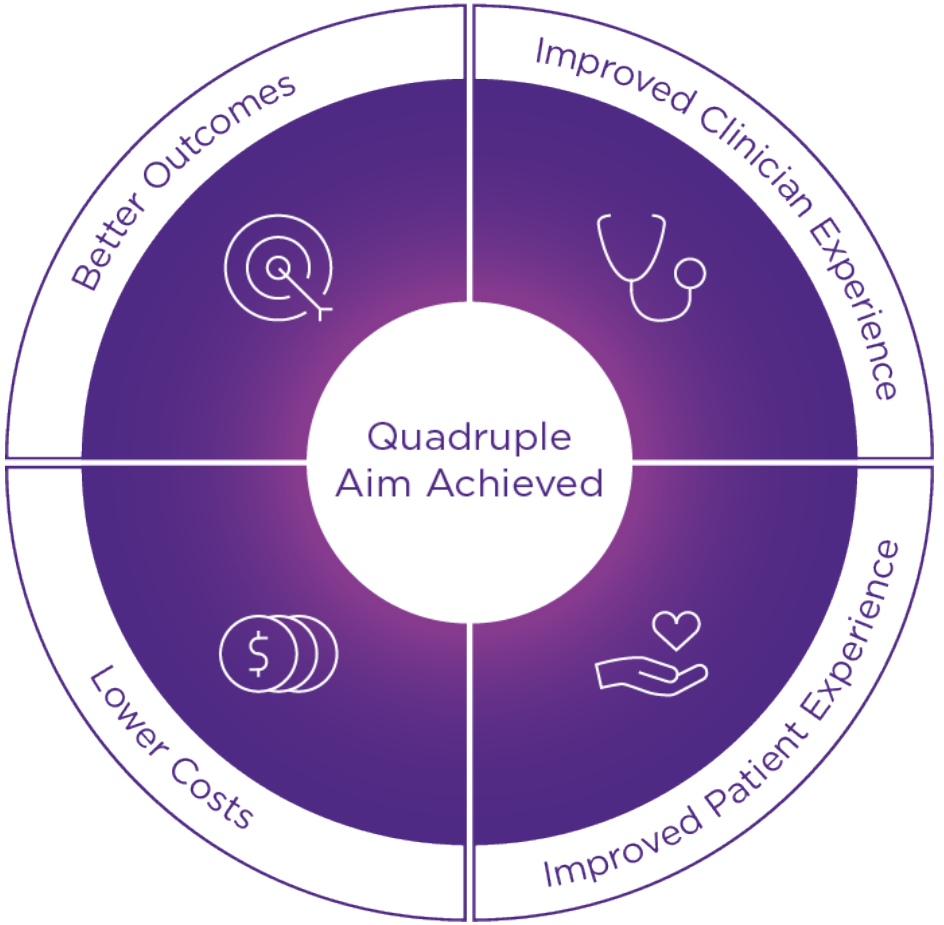
- electronic medical records such as those used in many Queensland Health hospitals
- telehealth videocalls between doctors and patients
- wearable devices for tracking a heart's rhythm

Quadruple Aim

The Quadruple Aim of health is a globally-recognised framework to optimise healthcare.

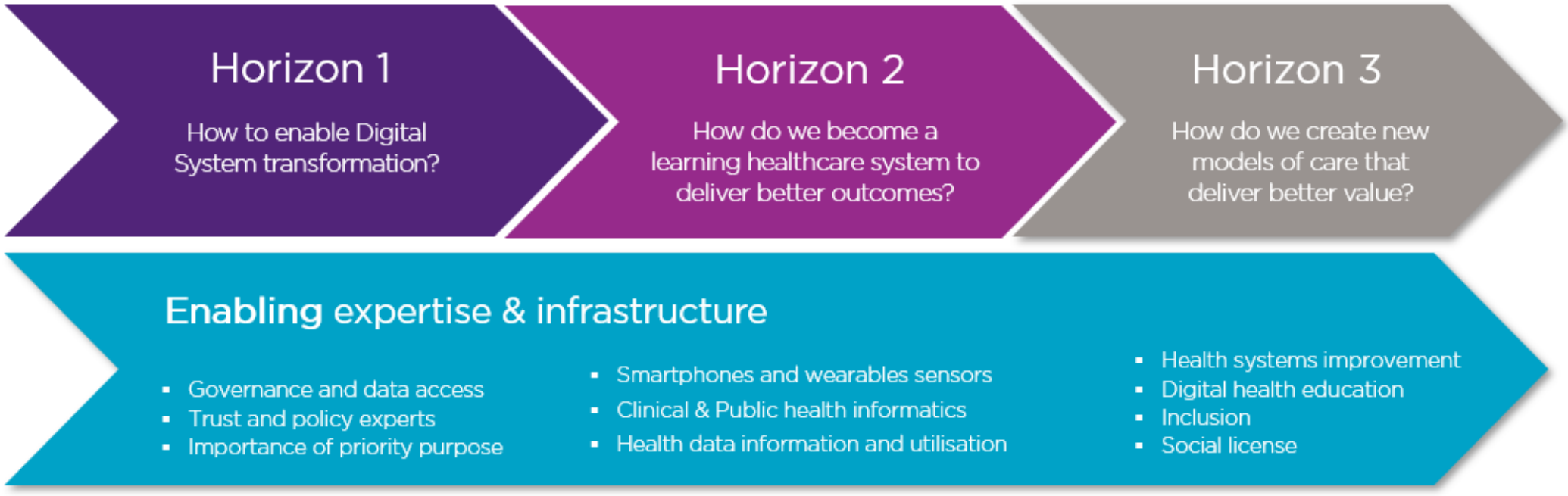
It seeks:

- improved clinician experience
- improved patient experience
- lower costs
- better outcomes



Three Horizons

QDHeC's work aligns with the Three Horizons outlined by the 2026 Queensland Health Digital Transformation Strategy.



Our Partners

- Researchers from six faculties across UQ:
  - Medicine
  - Science
  - Business, Economics and Law
  - Health and Behavioural Sciences
  - Engineering, Architecture and Information Technology
  - Faculty of Humanities and Social Sciences

- Queensland Health
- Stryker
- CSIRO
- Health and Wellbeing Queensland
- Queensland Cyber Infrastructure Foundation
- Health Translation Queensland

AI in Healthcare

AI has been a buzzword in the tech industry for a while now, but it's only recently that its potential in healthcare has started to be realized. From predicting diseases to improving patient outcomes, AI is changing the way we think about healthcare. But what does this mean for you? How can AI help you take control of your own health?

What is AI?

AI refers to the ability of machines to perform tasks that would normally require human intelligence to complete.

This includes tasks such as recognising speech, making decisions, and even driving cars.

At its core, AI uses algorithms and statistical models to analyse data and make predictions based on that data.

One example of AI in action is in virtual assistants like Siri and Alexa. These devices use natural language processing to understand spoken commands and respond with helpful information.

Another example is in self-driving cars, which use a combination of sensors and machine learning algorithms to navigate roads and avoid obstacles.

AI in Healthcare

AI has become an increasingly popular topic in healthcare. It refers to the use of computer algorithms to perform tasks that typically require human intelligence, such as learning from data, recognising patterns, and making decisions.

AI is already being used in a variety of ways in healthcare, including disease diagnosis, drug development, and personalised treatment plans. One of the main benefits of AI is its ability to process large amounts of data quickly and accurately, which can lead to faster and more accurate diagnoses. However, there are also potential risks associated with AI in healthcare, such as privacy concerns and the potential for bias in algorithmic decision-making.

Empowering Health Consumers

Artificial intelligence is revolutionizing the healthcare industry by giving patients more control over their own health. With AI-powered tools like wearables and mobile apps, consumers can monitor their health in real-time, track their progress, and make informed decisions about their care. For example, an AI-powered app can help diabetics manage their blood sugar levels by providing personalised recommendations based on their unique health data.

AI can also help consumers make more informed decisions about their healthcare by providing them with access to vast amounts of medical information. With AI-powered chatbots and virtual assistants, consumers can get answers to their health questions quickly and easily. This can be especially helpful for people living in remote areas or those who have difficulty accessing traditional healthcare services.

Challenges and concerns

One major challenge with using AI in healthcare is ensuring that the algorithms are accurate and reliable. If the algorithms are not properly designed, they could potentially lead to incorrect diagnoses or treatments, which could have serious consequences for patients. Additionally, there is a risk of bias in the data used to train the algorithms, which could result in unequal treatment for certain groups of patients.

Another concern is the potential loss of privacy. As AI systems collect and analyse large amounts of personal health data, there is a risk that this information could be accessed by unauthorised individuals or entities. It is important to ensure that proper security measures are in place to protect patient privacy and prevent data breaches.

Conclusion

AI has the potential to revolutionise healthcare by improving diagnosis and treatment, empowering health consumers, and reducing costs. However, there are also concerns around privacy, ethics, and the potential for bias in AI algorithms.

As health consumers, it is important to stay informed about the use of AI in healthcare and advocate for responsible and ethical implementation. By doing so, we can ensure that AI is used to benefit us all.

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Thank you

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