FUJITSU

Whitepaper

# Preparing Australian healthcare organisations for the AI-enabled future

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# Introduction

Since bursting into the mainstream with large language models (LLMs) such as ChatGPT in the last two years, artificial intelligence (AI) has become a juggernaut across all industries. The challenge for senior decision-makers is to understand the extent to which AI can deliver value for the organisation and its stakeholders. Nowhere are the stakes higher than in healthcare, where the sensitivity and privacy of patient data compete with the potential value in using that data for significantly improved public health outcomes.

Australia's existing healthcare management system is complex, antiquated, and not fit for the future of healthcare. The challenge is to improve the long-term strategic planning and thinking of health system funding and delivery. However, this is difficult when AI capabilities are evolving more rapidly than what healthcare governance bodies can keep up with. Responsible AI use is crucial, so the sector needs to proceed in good faith with clear guardrails; however, it cannot wait for regulatory bodies to set legislation.

Healthcare organisations looking to leverage AI for patient and organisational benefit can use the well-accepted quadruple aims of healthcare to guide decision-making. These aims prioritise patient experience, population health, workforce satisfaction, and value for money. Linking every decision back to these aims will deliver better outcomes across the patient journey.

This whitepaper explores how AI can improve the patient journey and explains how AI projects can be used to achieve the quadruple aims of healthcare.

# The patient journey

## 1. Patient becomes unwell

Currently, a person may become slightly or significantly unwell and determine that treatment is required. Many patients delay seeking treatment for various reasons such as time, cost, fear, or not wanting to place unnecessary burden on the healthcare system.

AI-enabled healthcare supports wearable devices that alert the patient that medical attention is recommended, or they may use an AI-enabled app to check their symptoms. This encourages earlier medical intervention, potentially reducing the severity of the illness and letting patients be treated more conservatively and with better success.

## 2. Patient visits healthcare provider

Telehealth consultations are now commonplace. They can be augmented with AI-enabled systems that note the patient's affect, demeanour, and physical appearance, comparing this data with what the patient says to identify patterns and signals that assist with diagnosis or further testing.

This reduces the cost of unnecessary testing while narrowing down the patient's symptoms faster for a quicker resolution of their illness. If necessary, the patient can also be referred to a specialist sooner based on AI analysis of test results and symptoms.

## 3. Patient is treated

The patient is treated using the most effective combination of medications and/or procedures based on comprehensive data. In complex cases where multiple treatment options may be available, or the treatment itself may come with unwanted side effects, the patient could be given a digital twin. Potential treatments could be tested safely on this non-physical patient. Then, the most effective treatment can be administered in real life, reducing the time it takes to achieve a positive outcome for the patient.

AI can also help improve diagnosis accuracy through reviewing imaging reports such as X-rays and magnetic resonance imaging (MRIs). AI's high degree of accuracy and speed in diagnosing hard-to-detect conditions can improve patient outcomes while lowering treatment costs.

## 4. Patient is discharged

Once the patient is successfully treated, they can be discharged to manage their own healthcare using wearable devices and predictive analytics. These devices can monitor treatment success and alert the patient early if they need to seek further medical attention.

## 5. Patient re-enters the journey

Chronic and severe illnesses and complex conditions cannot always be treated successfully in a single episode. Often, patients re-enter the journey with new symptoms, recurrence of existing systems, or some combination thereof. AI systems can reduce the administrative workload associated with this process, delivering up-to-date medical records and reports to all healthcare personnel so that the patient can be treated quickly and effectively upon re-entry.

# Addressing the quadruple aims

The quadruple aim is a model for high-performing healthcare that considers individuals, the population, healthcare workers, and healthcare organisations. AI can help achieve these aims, and no AI project should be considered if it does not contribute to these.

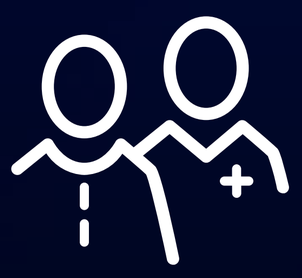
## Patient experience

AI can dramatically improve patient experience by personalising care, streamlining processes, and facilitating better communication. AI-powered tools can analyse vast amounts of patient data to provide tailored health recommendations and treatment plans. For instance, AI optimises appointment scheduling by considering factors like patient preferences, provider availability, and clinical urgency. This reduces wait times and lets patients see the most appropriate healthcare providers for their needs. Additionally, AI enhances patient-provider interactions by using ambient listening tools to transcribe clinical encounters, automatically capturing structured notes in electronic health records. This lets healthcare providers focus more on patient engagement rather than documentation. AI can also summarise complex medical information into easily understandable formats, improving patient comprehension of their health conditions and treatment plans.

## Population health

AI has significant potential to advance population health management through predictive analytics and proactive interventions. It can identify at-risk individuals and predict disease outbreaks by analysing diverse data sources, including electronic health records, socioeconomic data, and environmental factors. This lets healthcare organisations implement targeted interventions and develop more effective prevention strategies. AI also supports policymakers in understanding the complex relationships between social determinants of health and healthcare outcomes.

AI can help prioritise interventions that maximise returns on health investments by modelling "what if" scenarios, leading to more equitable and effective population health strategies.



## Workforce satisfaction

AI significantly improves workforce satisfaction by automating routine tasks, supporting clinical decision-making, and optimising workflows. It handles administrative tasks like scheduling, email responses, and coding optimisation, freeing up healthcare professionals to focus on patient care and more complex responsibilities. This can reduce burnout and increase job satisfaction. AI-powered clinical decision support tools support healthcare providers in making more informed decisions by synthesising vast amounts of medical knowledge and providing evidence-based recommendations. This improves care quality and enhances provider confidence and satisfaction in their clinical practice.

## Value for money

There is potential to generate substantial cost savings in healthcare while improving outcomes using AI. A report by McKinsey and Harvard researchers estimates that broader AI adoption could lead to savings between five and 10 per cent in healthcare spending, or roughly US$200 billion to US$360 billion annually in the United States[1]. These savings can come from various sources, including improved clinical operations, enhanced quality and safety measures, and optimised resource allocation.

AI can help healthcare organisations deliver better value for money by reducing administrative inefficiencies and clinical over utilisation. For example, AI can help hospitals optimise operating room use and detect adverse events, leading to significant cost savings. Additionally, AI-driven improvements in claims management, such as automating prior authorisation processes, can benefit health insurers.

[1] https://www.healthcaredive.com/news/artificial-intelligence-healthcare-savings-harvard-mckinsey-report/641163/

# Operating within the current legislative framework

The rapid advancement of AI technologies in healthcare offers both opportunities and challenges for organisations seeking to improve patient outcomes and operational efficiency. Although official approval or legislation may lag behind technological progress, healthcare organisations need to embrace AI proactively to remain competitive and deliver cutting-edge care. However, adopting AI should not come at the expense of ethical considerations. Healthcare organisations must establish robust ethical guardrails to ensure responsible AI implementation. This includes developing comprehensive governance frameworks, conducting ongoing risk assessments, and prioritising transparency in AI-driven decision-making. Organisations will demonstrate their commitment to patient safety and data privacy while leveraging AI's transformative potential in doing so. Importantly, healthcare leaders should view the current regulatory landscape as an opportunity to shape best practices and influence future legislation.

The Australian Government has recently proposed mandatory guidelines for AI systems to ensure their safe and responsible use. These guardrails address key concerns surrounding AI implementation, especially in critical sectors such as healthcare. The proposed measures include:

- Ensuring AI systems are safe, secure, and reliable
- Protecting privacy and data rights
- Providing appropriate human oversight and accountability
- Ensuring fairness and non-discrimination
- Implementing transparency and explainability measures

Healthcare organisations should proactively align their AI strategies with these proposed guardrails to ensure compliance and maintain public trust.

Implementing AI solutions thoughtfully and ethically lets organisations contribute to the development of industry standards and showcase the positive impact of responsible AI adoption in healthcare. This proactive approach will position organisations as thought leaders while building trust with patients, regulators, and the broader community.


# Ethical considerations for AI in healthcare

AI offers immense potential to advance the quadruple aims in healthcare, though it's crucial to implement these technologies thoughtfully and ethically. Healthcare organisations should focus on achieving measurable positive clinical impacts rather than chasing arbitrary metrics. It's essential to include healthcare subject matter experts in the development and implementation of AI systems to promote effectiveness and safety.

Healthcare organisations must remember that AI is a tool to augment and support human expertise, not replace it. A balanced approach that prioritises patient safety, data security, and ethical considerations is required for successful AI integration in healthcare while harnessing the transformative potential of these technologies.

## Privacy and data security

One of the primary ethical concerns is the protection of patient privacy and data security, as AI systems require vast amounts of sensitive health data to function effectively.

To address this, healthcare organisations should:

- Implement robust encryption and anonymisation techniques to safeguard patient data.
- Adopt responsible data handling practices, including decentralised data sharing.
- Ensure compliance with regulations like the Privacy Act and general data protection regulation (GDPR).
- Conduct regular vulnerability testing to identify and address potential weaknesses in IT infrastructure and AI systems.
- Develop and maintain strong data security contracts with third-party vendors.

## Bias and fairness

AI algorithms can perpetuate or exacerbate existing healthcare biases, leading to unfair outcomes for certain demographic groups.

To mitigate this, healthcare organisations can:

- Use diverse datasets for training AI algorithms to represent all population groups.
- Implement ongoing monitoring and auditing of AI systems to detect and correct biases.
- Engage in collaborative efforts with diverse stakeholders to identify and address potential biases.

## Transparency and explainability

The “black box” nature of some AI algorithms makes it difficult for healthcare providers and patients to understand how decisions are made.

Taking the following steps will improve healthcare organisations’ transparency:

- Prioritise the development and use of explainable AI models in healthcare settings.
- Provide clear information to patients about when and how AI is used in their care.
- Develop guidelines for healthcare professionals on interpreting and communicating AI-generated insights.

## Accountability and liability

Determining responsibility when AI systems make errors or contribute to adverse outcomes can be challenging.

To address this, healthcare sector businesses should:

- Establish clear accountability frameworks for AI use in healthcare.
- Develop robust governance structures that oversee the implementation and AI system use.
- Ensure that healthcare professionals maintain ultimate responsibility for patient care decisions.

## Informed consent

Patients should be aware of, and consent to, the use of AI in their care.

To achieve informed consent, it is necessary to:

- Develop clear, understandable information about AI use for patients.
- Give patients the option to opt-out of AI-assisted care if they are uncomfortable.
- Train healthcare providers to effectively communicate about AI use with patients.

## Impact on healthcare professionals

AI integration could potentially change the roles and responsibilities of healthcare workers.

To address this, healthcare organisations should:

- Invest in training and education programs that adapt healthcare professionals to working alongside AI systems.
- Emphasise that AI should augment, not replace, human expertise in healthcare.
- Develop guidelines for the responsible use of AI by health professionals.

## Equity and access

AI could exacerbate existing healthcare disparities if not implemented thoughtfully.

To promote equity, it's important to:

- Develop AI solutions with consideration for diverse populations and healthcare settings.
- Work towards equitable access to AI-enhanced healthcare services.
- Collaborate with underserved communities to understand and address their specific needs and concerns regarding AI in healthcare.

## Ethical framework and governance

Organisations should comprehensively address these ethical considerations by:

- Establishing a dedicated ethics committee to oversee AI implementation and use.
- Developing and adhering to a clear ethical framework for AI in healthcare, aligned with national and international guidelines.
- Reviewing and updating ethical policies regularly as AI technologies and their applications evolve.
- Engaging in ongoing dialogue with patients, healthcare professionals, ethicists, and other stakeholders to identify and address emerging ethical issues.
- Participating in industry consortia and standards bodies to contribute to the development of best practices and ethical standards for AI in healthcare.

Healthcare organisations can harness the potential of AI to improve patient care while maintaining trust, ensuring fairness, and upholding the fundamental principles of medical ethics by proactively addressing these ethical considerations. It's crucial to remember that ethical AI implementation is an ongoing process that requires continuous evaluation, adaptation, and improvement as technologies and societal expectations evolve.

The ethical considerations discussed in this section align with the Australian government's proposed AI mandatory guardrails. Healthcare organisations should ensure their AI implementation strategies address:

- Safety and reliability of AI systems in clinical settings
- Robust privacy protections for patient data
- Clear accountability frameworks for AI-assisted decision-making
- Fairness and non-discrimination in AI algorithms and outputs
- Transparency and explainability of AI systems to both healthcare providers and patients

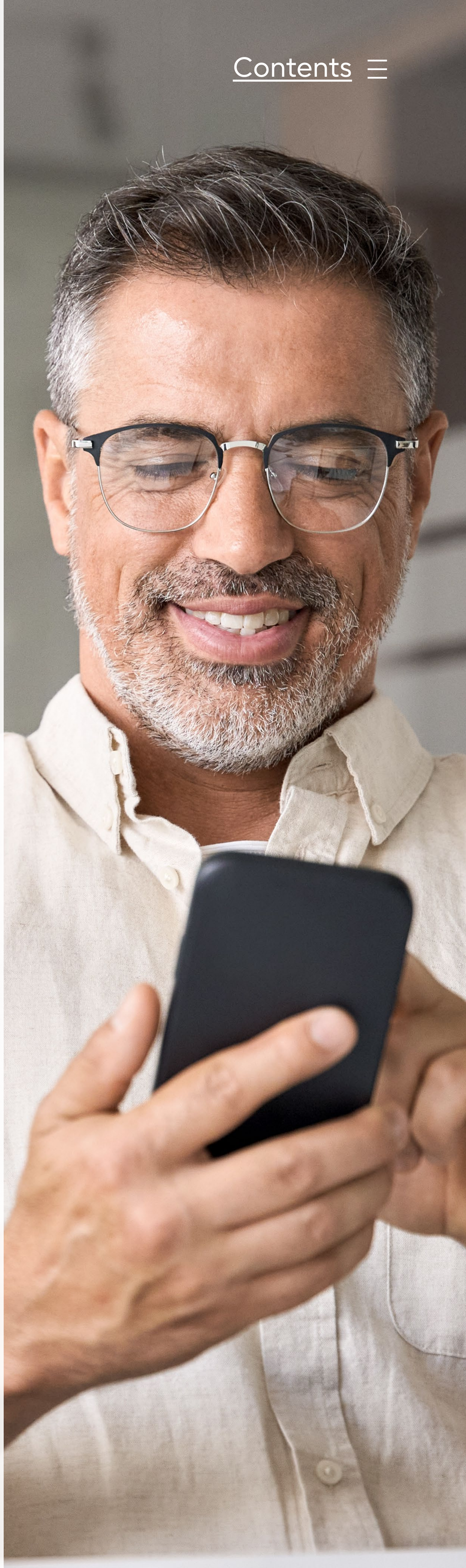
# How Fujitsu can help

Fujitsu understands the complexities of implementing AI in healthcare settings. Our approach includes practical, step-by-step adoption strategies that align with the quadruple aims while addressing the healthcare sector's unique challenges and opportunities.

We recommend beginning with AI products and solutions that already exist and have proven to be effective in healthcare environments. These initial steps should be low-risk, high-benefit applications that any healthcare organisation can implement to see immediate returns.

Fujitsu works closely with many healthcare providers at national and local levels, so we recognise the shortage of data scientists, particularly those with healthcare domain expertise. As part of our service, we provide not just the AI technology, but also the data science expertise needed to implement and maintain these systems effectively in healthcare settings. This includes support for data governance, a critical aspect in the highly regulated healthcare environment. Once initial AI projects are implemented successfully, we guide healthcare organisations in building on this foundation. We gradually expand AI use to more complex applications such as AI-assisted diagnosis or personalised treatment planning. We emphasise the importance of continuously evaluating the impact of AI solutions on each dimension of the quadruple aims within the specific context of healthcare delivery throughout the AI adoption journey.

Eventually, AI will facilitate the convergence of patient and provider pathways to deliver holistic, human-augmented care.



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**To learn more about how Fujitsu can help your healthcare organisation leverage AI successfully, contact us today.**