



17 July 2024

The Senate Select Committee on Adopting AI
Australian Parliament House
Canberra
ACT 2600

Re: Inquiry into Adopting Artificial Intelligence (AI)

Thank you for the opportunity to provide input into evolving policy for the safe and responsible adoption of AI in healthcare.

This submission is made on behalf of the Australian Alliance for AI in Healthcare (AAiH), a national community of practice with over 100 member organisations drawn from industry, consumer organisations, health service providers, peak professional bodies, and academia.

In November 2023 the Alliance launched a **National Policy Roadmap for AI in Healthcare** after broad consultation across its membership, and with the input of peak government agencies, and state and federal departments of health.

The Roadmap (attached) details 16 key policy recommendations across five priority areas:

1. AI Safety, quality, ethics and security
2. Workforce
3. Consumers
4. Industry
5. Research

These 16 recommendations address the seven areas identified in the Select Committee's Terms of Reference. In developing these recommendations, we sought to build on current regulatory structures that are healthcare specific, and to focus on those challenges which require healthcare-specific policy development.

AI in healthcare requires specific policy attention due to the stringent requirements needed to ensure 'medical grade' AI. These include safety standards, stringent governance to avoid patient harm; a higher burden of regulatory compliance than in other industries, and privacy requirements that are unique to healthcare. AI localisation needs bring specific governance requirements such as provider organisation accreditation.

On behalf of the AAiH

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Australian Alliance
for Artificial Intelligence
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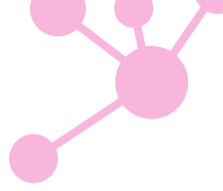
A National Policy Roadmap for Artificial Intelligence in Healthcare





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Executive Summary

Artificial Intelligence has benefits too big to ignore. Taking advantage of these benefits will however require a mature and co-ordinated national approach.

For Australia’s healthcare system to remain sustainable and resilient while delivering quality care, it must evolve to meet many new demands, including increasing disease complexity, treatment intensity, climate change and future pandemics. Artificial Intelligence (AI) promises us a pathway to creating this smarter, more adaptive health system. From interpretation of imaging and pathology, triage and resource allocation, clinical documentation, through to the personalisation of therapy, AI will be used both by consumers and clinicians and touch most aspects of the healthcare system.

AI is however also a major disrupter, presenting opportunities and threats across all industries. Australian governments must help industry exploit AI, and support healthcare services to be effective adopters of AI. However, doing so is complex and requires a multisectoral policy approach.

This National Policy Roadmap for AI in Healthcare (The Roadmap) delivers a policy agenda for AI in Healthcare. It delivers a critically needed co-ordinated national approach, with the aim of bringing Australia into line with comparable nations who have already made substantial progress in investment and adoption of AI.

The Roadmap lays the foundation for Australia to embrace the opportunities that AI brings to healthcare, and is designed to assist all levels of government, industry and civil society. It identifies current gaps in Australia’s capability to translate AI into effective and safe clinical services and provides guidance on key issues such as workforce, industry capability, implementation, regulation, and AI safety. It also acknowledges and builds on the extensive work already undertaken nationally and internationally.

The Australian Alliance for Artificial Intelligence in Healthcare (AAAiH) released an earlier version of The Roadmap in 2021 after extensive community consultation and a national survey of 180 stakeholder organisations. During 2023, in the face of rapid technology advances such as generative AI, the AAAiH undertook further consultations and hosted a policy development workshop with representatives of over 30 peak organisations in August 2023, culminating in the present National Policy Roadmap.

The AAAiH has been supported in this endeavour by Macquarie University, the CSIRO Australian eHealth Research Centre, RMIT University, the Digital Health Cooperative Research Centre, and the Australasian Institute of Digital Health.

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AI in Healthcare

National Policy Roadmap at a glance

1. AI SAFETY, QUALITY, ETHICS AND SECURITY	2. WORKFORCE	3. CONSUMERS
Priorities		
Ensure patients receive safe, effective, and ethical care from AI healthcare services which have been developed in accordance with ethical principles, a safety framework and are appropriately monitored post-implementation	Understand knowledge gaps in the workforce and then train the current and future healthcare workforce in the use and implementation of AI-enabled healthcare services.	Help all Australians, including vulnerable consumers, safely use AI to navigate the complex healthcare system and be active participants in the management of their own care and wellbeing.
Key Recommendations		
<div>1. To better coordinate and harmonise the responsibilities and activities of those entities responsible for oversight of AI safety, effectiveness, and ethical and security risks, establish a National AI in Healthcare Council.</div> <div>2. To ensure AI in healthcare is safe, effective and therefore does not harm patients, it needs to be developed and deployed within a robust risk-based safety framework.</div> <div>3. For accreditation, healthcare organisations using AI should demonstrate that they meet minimum AI safety and quality practice standards.</div> <div>4. Urgently communicate the need for caution in the clinical use of generative AI when it is currently untested or unregulated for clinical settings, including the preparation of clinical documentation.</div> <div>5. Ensure the national AI ethical framework from the Department of Industry, Science and Resources supports the deployment of value-based clinical and consumer AI in routine practice.</div>	<div>6. Support the development of a shared code of conduct for the safe, responsible and effective use of AI by health professionals and organisations.</div> <div>7. Assist professional bodies in accessing expertise and prior models to support the development of profession-specific codes of practice for the responsible use of AI.</div>	<div>8. Co-design and collaboratively implement a nationally accessible program for digital health literacy to inform the public of AI's benefits, risks and safe use, and increase public trust and confidence in AI.</div> <div>9. Work together with Aboriginal and Torres Strait Islander communities to develop a mechanism that collates health-related data for use in AI in a culturally safe and trusted manner within their control, in line with principles of Indigenous Data Sovereignty.</div> <div>10. Ensure professional codes of conduct and training emphasises the role of clinicians in educating patients about the responsible use of AI, as part of a commitment to shared decision making.</div>

4. INDUSTRY	5. RESEARCH
Priorities	
Support development of the local healthcare AI industry to become globally competitive and deliver significant clinical and economic benefits to Australia.	Ensure the development and deployment of AI in healthcare is based on the most up to date evidence, and that Australia retains world-class sovereign capability to use AI and support industry in the national interest.
Key Recommendations	
<div>11. Develop national clinical AI procurement guidelines in partnership with the jurisdictions, health services and industry.</div> <div>12. Provide support and incentives for local industry (and SMEs in particular).<div>a. Consider expanding the R&D Tax incentives scheme to cover regulatory compliance costs.</div><div>b. Ensure the pathway to reimbursement for AI-based clinical services via Medical Services Advisory Committee (MSAC) is understood.</div><div>c. Consider additional funding to support new products to come to market.</div></div> <div>13. Develop mechanisms to provide industry with ethical and consent-based access to clinical data to support AI development and leverage existing national biomedical data repositories.</div> <div>14. Support the development of a National AI Capability Centre in Healthcare (NAICCH) to assist industry (and SMEs in particular) to bring products to market.</div> <div>15. Assist future policy by identifying emerging AI markets and opportunities.</div>	<div>16. Provide significant targeted support for healthcare AI research that builds sovereign capability and can translate to improved priority health services and support for industry.</div>

Vision

An AI-enabled healthcare system delivering personalised healthcare safely, ethically and sustainably.

Mission

A fully funded national plan by 2025 designed to create an AI-enabled Australian healthcare system capable of delivering personalised healthcare, safely, ethically and sustainably supported by a vibrant AI industry sector that creates jobs and exports to the world, alongside an AI-aware workforce and AI-savvy consumers.

The AI Opportunity for Healthcare

We are at the beginning of a profound digital disruption of healthcare. If the last decade was one of big data and analytics, the next research frontier is AI. Indeed, in its *Artificial Intelligence Roadmap*¹, CSIRO's Data61 identifies healthcare as one of three highest priority opportunities for the nation.

Creating a smart, adaptive health system is key to the sustainability of quality healthcare in Australia. AI-enabled health services. The combination of machine learning that can exploit nuanced patterns in large-scale clinical datasets, and advanced computational reasoning methods including generative AI that support human decision-making, allows us to imagine entirely new ways of delivering care. If developed in a meaningful, careful and collaborative way, will herald new modes of delivery and models of healthcare that are more personalised, effective and safe, and will ensure our healthcare system is sustainable and remains an international leader.

AI offers us profound new opportunities to improve clinical diagnosis, treatment and workflows. From research bench to clinical bedside and into the hands of patients, AI promises to make Australian healthcare a learning system that is more nimble, adaptive, personalised, safe, effective and equitable.

Internationally, there have been significant investments in AI in healthcare. In 2020, the US market exceeded \$1.15 billion, and it is on a remarkable trajectory, projected to reach \$14.38 billion by 2027². This substantial growth is exemplified by the US Food and Drug Administration (FDA) having reviewed and authorized over 500 medical devices incorporating artificial intelligence, reflecting the dynamic nature of the market. The UK government has strategically invested over £2.3 billion in AI initiatives for almost a decade, including £250 million in the NHS AI Lab to accelerate healthcare AI.³

While Australia is well positioned to be a global leader in the real-world application of AI, we have yet to develop a coordinated approach for how that might happen, let alone invest at anywhere near the scale of other nations. All the necessary elements for a world-class translational capacity are in place. We have a high performing health system and substantial digital infrastructure at State and Federal levels. Australia has particular strengths in computer and data science, bioscience and implementation science. Our researchers have long applied AI to healthcare, stretching back over four decades. While several frameworks and roadmaps have been developed for the AI sector, Australia is currently unprepared to manage the opportunities and risks of an AI-enabled health system.



"Artificial Intelligence has benefits too big to ignore. Taking advantage of these benefits will however require a mature and co-ordinated national approach."

Professor Enrico Coiera
Founder, Australian Alliance for Artificial Intelligence in Healthcare

1 CSIRO Data61 Artificial Intelligence Roadmap
2 North America Artificial Intelligence (AI) in Healthcare Market Size
3 UK Government National AI Strategy



About the National Policy Roadmap for Artificial Intelligence in Healthcare

The Roadmap identifies potential gaps in Australia’s capability to translate AI into effective and safe clinical services, across areas such as industry capability, implementation, regulation and AI safety. It builds on the extensive work that has already been undertaken nationally and internationally, including existing national frameworks and policies that relate to AI, to provides guidance on how to close these gaps.

The Roadmap provides 16 recommendations across 5 priority areas, and in the following sections each of these priority areas is described, focusing on national-scale challenges, and a set of recommendations which will see us progress over the next 2-5 years.

The Roadmap has been developed through extensive stakeholder engagement across the healthcare sector, including government, industry, peak bodies and consumers. AAAiH released the first version of the Roadmap in 2021. In 2023, faced with a rapid change in technology, further community consultations were undertaken as well as a policy development workshop conducted with representatives of over 30 peak organisations culminating in The Roadmap. These activities were undertaken with the support of Macquarie University, the CSIRO Australian eHealth Research Centre, RMIT University, the Digital Health Cooperative Research Centre, and the Australasian Institute of Digital Health.

OPPORTUNITIES FOR AI IN HEALTHCARE

The AI opportunity is driven by three advances. Firstly, significant global investment in electronic health records is now producing massive clinical datasets. Secondly, low-cost access to computational power and storage is available at scale. Thirdly, deep learning technologies (and in particular generative AI including large language models) which rely on large data sets and computational power are demonstrating near or better than human capability on many tasks. AI finds broad application across healthcare:

- Learning:** Machine learning systems discover patterns, categories, and relationships from clinical, population, administrative and personal heath data, that can then be used to analyse key patient-specific information, diagnose diseases, or suggest treatments. Deep learning methods are based on neural networks.
- Documenting:** Large language models promise to reduce administrative loads on clinicians by automating the creation of documentation such as specialist letters, electronic health records and discharge summaries.
- Planning:** Using knowledge about tasks, resources, and goals as well as information about trade-offs, AI can be used to create plans as well as dynamically update them, for example optimising a patient’s chemotherapy treatment regime over an extended period.
- Communicating:** Conversations are sometimes essential to communicate complex ideas, or to obtain additional information in pursuit of a diagnostic or therapeutic goal. AI can help translate complex information into consumer-friendly language. Chatbots can participate in structured conversations with patients or clinicians to accomplish specific tasks such as obtain information or deliver cognitive behavioural therapy.
- Discovery:** A special class of learning algorithms is focused on creating new knowledge, for example discovering natural scientific laws, or previously unexpected associations such as the genetic basis of a disease, or repurposing of a drug for a novel use.

AI Safety, Quality, Ethics and Security

Ensure patients receive safe, effective, and ethical care from AI healthcare services which have been developed in accordance with ethical principles, a safety framework and are appropriately monitored post-implementation.

Patients must receive safe, effective, and ethical care from AI-enabled healthcare services and be assured sensitive healthcare data are protected from cybersecurity threats, privacy breaches or unauthorised use. In Australia, the Therapeutic Goods Administration (TGA) has legal responsibility to regulate software-based medical devices including those embedded with AI. The Australian Digital Health Agency (ADHA) has given some consideration to AI, and the Australian Commission on Safety and Quality in Health Care (ACSQHC) has a remit to oversee quality of care standards that will need to embrace AI.

Effective healthcare AI governance will require a more unified and comprehensive approach. There are significant gaps and overlaps in remit which can only be identified through inter-agency collaboration, and targeted resourcing is needed to address emerging challenges. While clinical AI is subject to TGA software as a medical device (SaMD)

safety regulation, non-medical generative AI like ChatGPT falls into a grey zone, where it is being used for clinical purposes but evades scrutiny because they are general purpose technologies not explicitly intended for healthcare. Uploading sensitive patient data into a non-medical AI like ChatGPT hosted on United States servers is also problematic from a privacy and consent perspective.

The current model for regulating AI was designed over 30 years ago in an environment where technology was single function and predictable. Today, governance needs to move from a ‘certify once’ model to one which ensures adaptive AI remains fit for purpose as it evolves. Localisation of AI models by health services will be a common strategy to deal with data biases, and governance is needed to ensure local AI services function as expected.

Recommendations

1. To better coordinate and harmonise the responsibilities and activities of those entities responsible for oversight of AI safety, effectiveness, and ethical and security risks, **establish a National AI in Healthcare Council.**

The Council would be led by Government (e.g. Australian Government Department of Health and Aged Care), given the legislative responsibilities of Government Agencies in this space. Potentially similar in construction to the Australian Health Ministers’ Advisory Council (AHMAC), it would have broad membership e.g. State, Territory and Commonwealth Health Departments, cross-portfolio representation such as Department of Industry, Science and Resources, and inclusion of the TGA, ADHA, ACSQHC, National Aboriginal Community Controlled Health Organisation (NACCHO), other agencies, consumers, peak professional bodies, and industry.

2. To ensure AI in healthcare is safe, effective and therefore does not harm patients, it needs to be **developed and deployed within a robust risk-based safety framework:**

- a. Pre-market, vendors must **provide regulators with rigorous evidence that their algorithms perform well in real-world settings.**

Given that AI algorithms do not always work well in settings different to the ones they are developed in, a model portability assessment would test for biases in algorithm performance and suitability for intended populations and health services, including culturally or geographically diverse populations. This would require transparency regarding the populations used for algorithm training and testing.

- b. Post-market, **improve the effectiveness of national post-market safety monitoring** so that cases of AI-related patient risk and harm are rapidly detected, reported and communicated.

Linkage of state-based, primary care and consumer safety reporting systems to those of the TGA is needed, as is increased resourcing for the expected increase in report volumes and complexity.

3. For accreditation, healthcare organisations using AI should demonstrate that they **meet minimum AI safety and quality practice standards.**

Accreditation should include assessment of cybersecurity risk preparedness, best practice for storing and using patient data to train or localise AI, and best practice for deployment, governance and maintenance of clinical AI. This could occur through the ACSQHC’s Australian Health Service Safety and Quality Accreditation Scheme⁴.

4. Urgently **communicate the need for caution in the clinical use of generative AI** when it is currently untested or unregulated for clinical settings, including the preparation of clinical documentation.

5. Ensure the **national AI ethical framework** from the Department of Industry, Science and Resources supports the deployment of value-based clinical and consumer AI in routine practice.

The framework would integrate many pre-existing ethics frameworks across the jurisdictions, regulators and other bodies. Any national AI ethical framework would need to be complemented by proportionate regulation, standards to guide deployment and upskilling of the workforce to practise safely alongside AI. This is potentially a work package for the proposed National AI in Healthcare Council.

4 Australian Health Service Safety and Quality Accreditation Scheme

Workforce

Understand knowledge gaps in the workforce and then train the current and future healthcare workforce in the use and implementation of AI-enabled healthcare services.

Developing and sustaining a workforce capable of running a modern health system is high on our national health priorities.⁵ Ensuring that a workforce can engage safely and responsibly in AI design, development, implementation, evaluation and governance is crucial to meeting this ambition. AI-enabled services will be shaped by a diverse health workforce across many organisations. This includes clinicians, health service administrators, public health workers, business managers and investors, science and technology researchers, and developers.

To prepare the sector for the increased use of AI, we will need to support the creation of national consensus on foundational clinical competencies, scopes of professional practice, and codes of professional conduct to use AI, and provide a basis for patient safety, service quality and practitioner credentialling.

This program should leverage existing work where possible and support new initiatives where gaps exist. For example, the Australian Medical Council and other national Board delegated bodies are developing or updating digital health standards for practitioners and education providers. The Royal Australian and New Zealand College of Radiologists has published Standards of Practice for Artificial Intelligence and other Colleges are in the process of doing so but may lack the necessary expertise in-house.



Recommendations

6. Support the development of **a shared code of conduct for the safe, responsible and effective use of AI** by health professionals and organisations.
7. Assist professional bodies in accessing expertise and prior models to support the **development of profession-specific codes of practice for the responsible use of AI.**

Ahpra’s *Shared Code of Conduct*⁶ sets out 12 National Boards’ expectations of the practitioners they regulate and is a possible model. Other professional groups and organisations beyond Ahpra will have interactions with AI in clinical settings (e.g. aged care, social workers) and their organisations are subject to other codes of practice (e.g. the NSW Code of Conduct for Health Organisations). Further discussion is required to explore whether the use of AI is best incorporated into existing codes or be subject to a stand-alone code.

If as recommended, a NAICCH was created (see INDUSTRY), this could be a key role for it. Co-ordination would be required with existing organisations such as the AIDH or ADHA, in partnership with professional groups, who already have a mature approach to codes of practice.

5 Department of Health and Aged Care Corporate Plan

6 Ahpra Shared Code of Conduct

Consumers

Help all Australians, including vulnerable consumers to safely use AI to navigate the complex healthcare system and be active participants in the management of their own care and wellbeing.

Consumers access AI-enabled services every day and should have the skills to do so safely. AI driven recommender systems for example, have transformed purchasing decisions online and social media companies target us with advertisements that are closely matched to our interests. Currently most of the AI-enabled health technology consumers use comes in the form of healthcare mobile apps. These include symptom checkers, which might tell a consumer whether they need to see a doctor or even provide a diagnosis, as part of a “digital first” virtual care model.

Consumers must also be informed and engaged in decisions about the development and use of AI and its implications for them, to foster public confidence and willingness to invest in healthcare AI. If patients, carers, consumers and citizens are to be involved in co-designing AI-enabled services, and advising on ongoing management, this will require a level of literacy currently inaccessible to most Australians.



Recommendations

8. Co-design and collaboratively implement a **nationally accessible program for digital health literacy** to inform the public of AI’s benefits, risks and safe use, and increase public trust and confidence in AI.

9. Work together with Aboriginal and Torres Strait Islander communities to develop a mechanism that collates health-related data for use in AI in a culturally safe and trusted manner within their control, in line with principles of Indigenous Data Sovereignty.^{7,8}

Developed and guided in consultation with Aboriginal and Torres Strait Islander peak bodies and representative organisations such as the National Aboriginal Community Controlled Health Organisation (NACCHO), the purposes for such a data collection
- include the provision of training data for AI systems in a manner that reflects Aboriginal and Torres Strait Islander communities’ unique strengths and priorities.

10. Ensure professional codes of conduct and training emphasise the role of clinicians in educating patients about the responsible use of AI, as part of a commitment to shared decision making.

Such changes to professional codes of conduct should involve consumers in co-design process across all populations, ages and abilities. Changes may include disclosure to patients that their deidentified patient data is being used to train AI and that clinical recommendations are being based on information provided by AI.

7 Lowitja Institute Indigenous Data Governance and Sovereignty
8 Maiam nayri Wingara Indigenous Data Sovereignty Collective Principles

Industry

Support development of the local healthcare AI industry to become globally competitive and deliver significant clinical and economic benefits to Australia.

Australia excels in healthcare delivery and can be positioned as a leader in AI with appropriate policies, regulation and financial incentives. CSIRO’s Data 61 *Artificial Intelligence Roadmap*¹ identifies healthcare as one of three national priorities and the Australian Government’s critical technologies list includes autonomous systems and AI technologies.⁹ The Australian AI in healthcare market is projected to grow from \$0.08 billion in 2022 to \$1.78 billion by 2030.¹⁰ The global market will grow from USD 15.1 billion in 2022 to USD 187.95 billion by 2030.¹¹

While Australia has great potential, our existing healthcare AI industry is small when compared to other nations. The US FDA has authorised over 500 new medical devices with AI or machine learning capabilities.¹² In England, investments to support the NHS in adoption of AI clinical services have made London a global capital for the healthcare AI industry.

There is a high regulatory burden on medical technologies. Industry must navigate the tension between investing in innovation and compliance with regulation. Small and medium-sized enterprises (SMEs) are particularly disadvantaged. Pressure from international competitors reduces the time available to bring a product to market. Larger companies with access to AI talent, technologies, training data, and the resources to meet regulatory hurdles are advantaged. Current R&D tax incentives support innovation but not regulatory compliance. US figures suggest regulatory costs can represent >75% of product development costs.¹³

Recommendations

11. Develop **national clinical AI procurement guidelines** in partnership with the jurisdictions, health services and industry.

Uniform guidelines describing best-practice for the health sector broadly will reduce local industry costs and facilitate partnering with large multinational providers. They also offer an effective mechanism to ensure working systems meet safety, quality, effectiveness and ethical benchmarks.
12. Provide support and incentives for local industry (and SMEs in particular).
 - a. Consider **expanding the R&D Tax incentives scheme** to cover regulatory compliance costs.
 - b. Work with industry to ensure the pathway to reimbursement for AI-based clinical services via Medical Services Advisory Committee (MSAC) is understood and reflects the unique aspects of this technology class.
 - c. Consider additional funding such as targeted grants to support the most promising and innovative products to come to market (e.g. via MTPconnect).
13. Develop mechanisms to provide industry with ethical and consent-based **access to clinical data** to support AI development and leverage existing national biomedical data repositories.

To maximise national benefit these mechanisms should be based on consistent use of identifiers across the healthcare system and national interoperability standards (e.g. FHIR, SNOMED CT) and be aligned with minimum national datasets and software vendor conformance profiles. Data use for research purposes would likely have a governance framework, similar to the ‘secondary use framework for My Health Record’ stewarded by the Australian Institute of Health and Welfare.¹⁴

14. Support the development of a **National AI Capability Centre in Healthcare** (NAICCH) to assist industry (and SMEs in particular) to bring products to market.

The NAICCH would focus on the many unique aspects of AI in healthcare and should link with other relevant organisations such as CSIRO’s National AI Centre to prevent overlap in roles. It could provide access to healthcare-specific technical consultancy services, guidance to industry on best practice in procurement and regulatory compliance, pathways to reimbursement (e.g. via MSAC), software licensing, and climate risk mitigation. Industry would benefit from access to local data sets to demonstrate product safety. Governance should include consumer and health sector representatives.

15. Assist future policy by **identifying emerging AI markets and opportunities**, and quantify the economic costs and benefits of AI in healthcare (including climate risks and benefits), and indicators of effective use of AI in national health priority areas (e.g. ageing, disability, mental health, Indigenous health, rural and remote health).

1 CSIRO Data61 Artificial Intelligence Roadmap
9 Department of Industry, Science, and Resources List of Critical Technologies in the National Interest
10 Australia Artificial Intelligence (AI) in Medical Imaging Market Report 2022 to 2030
11 Artificial Intelligence (AI) in Healthcare Market Size 2022-2030
12 FDA Artificial Intelligence and Machine Learning (AI/ML)-Enabled Medical Devices
13 FDA Impact on US Medical Technology Innovation

14 Department of Health Framework to guide the secondary use of My Health Record system data

Research

Ensure the development and deployment of AI in healthcare is based on the most up to date evidence, and that Australia retains world-class sovereign capability to use AI to support industry and in the national interest.

There is a global race to secure primacy in the healthcare AI space, given the huge commercial and health system benefits that are anticipated. Critical to success is the presence of a vibrant and innovative national research and development sector to develop the evidence, technologies and products that are underpinning AI-driven healthcare.

Australia however is a clear global laggard in research investment for healthcare AI. We have not come close to matching the R&D support available in other nations, and despite pockets of excellence, our national healthcare AI research capability overall, lacks global competitiveness:

- **Of the 84 randomised clinical trial studies of AI published internationally between 2018-2023, none were conducted in Australia.** The countries that were most active in clinical AI trials were the US (31%) and China (29%). About 37% were undertaken in the EU or its neighbours and were often multinational in scope (Figure 1).
- **AI research in Australia attracted only 0.9% of grant funding available from the National Health and Medical Research Council (NHMRC) and Medical Research Futures Funds (MRFF) for the period 2018-2022.** Analysis of that \$12 million annual average showed most went to clinical teams with limited AI track record, indicating uncertain targeting of that funding.

By comparison, since 2018 England has allocated over £144 million to healthcare AI research and development over multiple funding rounds, part of a much larger investment in embedding AI into the NHS.¹⁵ The EU has announced €220 million worth of investment in four sectoral Testing and Experimentation Facilities for AI, with one focused on health¹⁶, and in previous years has made substantial research investments in AI and digital health.¹⁷ China has also stepped up its investment in healthcare and life sciences with AI, aiming for 7 percent annual growth for R&D expenditure.¹⁸

The scale of the AI opportunity, as well as the significant head start other nations have made in research, indicate there is a need for bold rather than incremental thinking. Australia has already done so for Genomics, and there is a strong case to repeat this strategy for AI.

15 £21 million to roll out artificial intelligence across the NHS
16 EU invests €220 million to test AI solutions for healthcare, food, industry, and everyday life
17 European Commission grants €55.2 million to digital health projects addressing COVID-19
18 The next frontier for AI in China could add \$600 billion to its economy

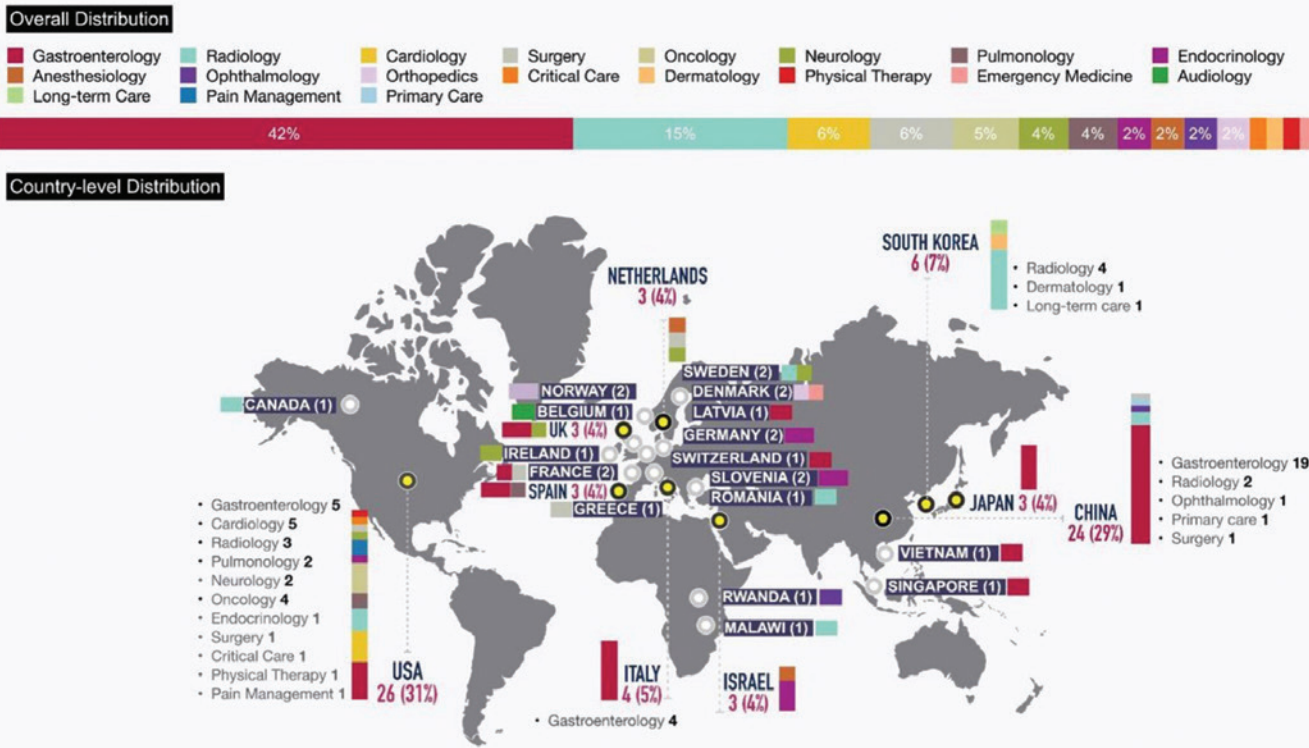


Figure 1: Of the 84 randomised clinical trial studies of AI published internationally between 2018-2023, none were conducted in Australia (used with permission of the authors).¹⁹

Recommendations

16. Provide **significant targeted support for healthcare AI research** that builds sovereign capability and can translate to improved priority health services and support for industry.

Resourcing may come from existing sources such as the NHMRC/MRFF and could include core funding for national centres of research excellence in healthcare AI. Allocation of funding should be made by panels with expertise in healthcare AI, to ensure funding is allocated to the best science and the best teams.

19 Randomized Controlled Trials Evaluating AI in Clinical Practice



APPENDIX A

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APPENDIX B

Acronyms

AAAIH	Australian Alliance for Artificial Intelligence in Healthcare
RMIT	RMIT University
Ahpra	Australian Health Practitioner Regulation Agency
AEHRC	Australian eHealth Research Centre
AIDH	Australasian Institute of Digital Health
DHCRC	Digital Health Cooperative Research Centre now
TGA	Therapeutic Goods Administration
ADHA	Australian Digital Health Agency
ACSQHC	Australian Commission on Safety and Quality in Health Care
AHMAC	Australian Health Ministers’ Advisory Council
NACCHO	National Aboriginal Community Controlled Health Organisation
MSAC	Medical Services Advisory Committee



About the Australian Alliance for AI in Healthcare

The **Australian Alliance for Artificial Intelligence in Healthcare (AAAH)** brings together over 100 national and international partners and stakeholders in academia, government, consumer, clinical, industry organisations, and peak bodies to translate frontier artificial intelligence (AI) technologies into real-world health services. Formed in 2018, we are supporting and accelerating the adoption of AI-enabled healthcare in Australia. Alliance members operate across strategic areas including Safety, Quality and Ethics, and Workforce.





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