

# Building AI Literacy for Healthcare Research: Canberra Health Services Library's Approach to Responsible AI Use in Evidence Synthesis

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## Abstract

This paper provides an overview of the application of artificial intelligence (AI) within the health and medical sectors, including its growing role in clinical practice, healthcare delivery, and research. The paper also outlines the contribution of the Canberra Health Services Library in advancing AI literacy among healthcare professionals and researchers. In response to the increasing relevance of AI in healthcare, the library developed and delivered a suite of AI training packages designed to enhance awareness, build foundational understanding, and support the responsible use of AI tools. These training initiatives aim to equip clients with the skills needed to effectively harness AI technologies while critically evaluating their outputs and recognising their limitations. The paper demonstrates the evolving role of health libraries in fostering digital and AI literacy and supporting the informed integration of emerging technologies into healthcare practice and research.

## Introduction

AI is becoming increasingly integrated into everyday life and is significantly transforming the healthcare, research, and education sectors. While AI offers substantial benefits, including enhanced efficiency, improved decision-making, and increased access to information, its adoption also requires careful consideration of professional, ethical, and governance standards. Maximising the benefits of AI necessitates a balanced approach that addresses challenges such as algorithmic bias, transparency, data privacy, and the occurrence of AI generated inaccuracies or hallucinations. These limitations can affect the reliability and value of AI outputs, thus highlighting the importance of critical evaluation, human oversight, and responsible implementation in professional practice.

## What is AI?

AI has been defined in various ways across the literature. According to the Australian Capital Territory Government (2025), AI is defined as the capability of a computer system to use data and algorithms to perform tasks that normally require human expertise.

To better understand AI, it is important to examine its major subsets, which are frequently discussed in the AI literature. These subsets represent different approaches and technologies that contribute to the broader field of AI.

### **Subsets of artificial intelligence**

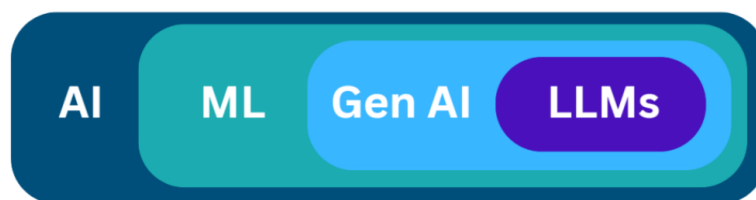
AI encompasses several related subfields, including machine learning, generative AI, and large language models.

**Machine learning (ML)** is a subfield of AI focused on algorithms that learn patterns from data and make predictions or decisions.

**Generative AI (Gen AI)** refers to models that generate new content such as text, images, audio or code from a user's prompt. It uses machine learning, particularly deep learning, to learn how to create this content. Examples include Copilot, ChatGPT and Midjourney.

**Large language models (LLMs)** are a subfield of Gen AI. These models are trained on large amounts of text data and are designed to understand and generate human-like language. Examples include GPT-5, Claude and Llama.

*Figure 1* illustrates the relationship between AI and its major subsets.



Source: Using AI skilfully (ACT Government intranet).

### **AI tools**

The rapid advancement of AI technologies has led to the development of a wide range of AI tools that support diverse personal, educational, and professional activities. These tools are available in both free and subscription-based versions and are designed for different user groups and purposes, such as content creation, information retrieval, data analysis, coding assistance, image generation, and workflow automation. The growing availability of AI tools has contributed to the increasing adoption of AI across government, industry, education, and research sectors.

Trip Pro, the premium version of the TRIP medical database subscribed to by the CHS Library, combines advanced evidence-based literature searching with AI powered features such as AskTrip, which provides rapid access to evidence based answers to clinical questions.

## **Canberra Health Library Context**

The Canberra Health Services (CHS) Library plays a pivotal role in supporting evidence informed healthcare through the delivery of high-quality information services, resources, and educational programs. The library's mission is to enhance access to health information at the point of need, evaluate and promote authoritative electronic resources, develop lifelong information and evidence-based practice competencies, and foster technological innovation that aligns with the strategic priorities of Canberra Health Services and the Health and Community Services Directorate. Library services are delivered across two campuses located at Garran and Bruce.

Education and workforce capability development are central components of the CHS Library's service portfolio. The library delivers weekly training sessions at the Garran campus and fortnightly sessions at the Bruce campus, providing staff with opportunities to strengthen their information and digital competencies. Training opportunities are promoted through the CHS Library Training Calendar and the organisation's internal staff newsletter in partnership with the Communications Team, ensuring broad visibility and accessibility across the health service.

Recognising the growing influence of AI within healthcare, research, and information management, the CHS Library developed a suite of AI literacy training programs for clinical and administrative staff. These programs form part of the library's broader framework for digital literacy, health literacy, information literacy, and AI literacy. The initiative aligns with the updated Health Libraries Australia Professional Competencies published by the Australian Library and Information Association (ALIA) Health Libraries Australia (Australian Library and Information Association, 2026), which emphasise the importance of digital and emerging technology capabilities for the health information workforce.

The development of the AI training program was also informed by key policy and strategic frameworks, including the ACT AI Assurance Framework (Australian Capital Territory Government, 2025), the ACT Digital Health Strategy 2019-2029 (Australian Capital Territory Health, 2019), the ACT Government Artificial Intelligence Policy (Australian Capital Territory Government, 2026), and the Australian Government Guidance on Artificial Intelligence in Health Care (Department of Health Disability and Ageing, 2026). Additionally, it also aligns with the National Safety and Quality Health Service Standards, specifically Standard 1: Clinical Governance (Patient safety and quality outcomes), Standard 2: Partnering with Consumers (Partnering with consumers in their own care and Health literacy), Standard 3: Comprehensive Care (Minimising patient harm), Standard 6: Communicating for Safety (Communicating critical information and Documentation of information) (Australian Commission on Safety and Quality in Health Care, 2021). Collectively, these frameworks highlight the

importance of building workforce capability to support the safe, ethical, and effective use of AI technologies within healthcare settings.

To address differing staff requirements, the CHS Library developed two complementary AI training programs. The first, AI for Healthcare Staff: Skills, Knowledge, and Resources, provides participants with a practical introduction to AI technologies and their applications within healthcare environments. The session explores key concepts, available tools and resources, opportunities for enhancing workplace productivity, and considerations relating to ethical and responsible AI use.

The second program, AI as a Research Partner: Applications in Health and Medical Research, is designed for staff engaged in research activities and focuses on the use of AI technologies to support the research lifecycle. The session examines how AI can assist with literature discovery, evidence synthesis, research planning, academic writing, and knowledge translation, while also highlighting the limitations and governance considerations associated with the use of AI in research contexts. These training sessions are interactive with quizzes and activities built into to cater for adult learning.

The learning outcomes for both programs are provided in Appendix 1.

Both training programs underwent a structured development and pilot phase before being implemented more broadly across the organisation. Participant feedback from the pilot sessions informed refinements to the content, delivery methods, and supporting resources, ensuring that the training remained relevant to the needs of CHS staff. The positive reception of the pilot sessions contributed to the wider organisational rollout of the programs. In June 2026, the training program was further expanded and adapted into an interactive workshop for a broader audience of health and medical professionals. The workshop, AI as Research Partner: Applications in Health and Medical Research, was presented at the 2026 Canberra Health Annual Research Meeting (CHARM) hosted by the University of Canberra. The session explored practical applications of artificial intelligence across the research lifecycle, including literature searching, evidence synthesis, academic writing, and research productivity.

The workshop was well received by attendees, who represented a diverse range of clinical, research, and professional disciplines. Participant feedback highlighted the relevance of the content, the practical demonstration of AI tools, and the value of understanding both the opportunities and limitations associated with AI use in healthcare and medical research. The positive response further reinforced the role of the CHS Library in supporting digital capability development and fostering AI literacy across the health and research workforce.

Additionally, feedback from the previous sessions reported receiving positive verbal feedback from participants, who indicated that the session was both useful and beneficial. Survey responses demonstrated that participants particularly valued learning how to construct effective prompts, understanding the types of information that can be used with Microsoft Copilot, and exploring the ethical considerations associated with the use of AI. In response to feedback from earlier sessions, the duration of the session has been increased from sixty (60) to ninety (90) minutes to allow greater opportunities for discussion and engagement using practical activities.

Selected participant testimonials illustrating perceptions of the AI training session are provided in Table 1.

**Table 1. Selected participant testimonials from the CHS Library's AI training sessions**

|   | AI for Healthcare Staff: Skills, Knowledge, and Resources | AI as Research Partner: Applications in Health and Medical Research | AI as Research Partner: Applications in Health and Medical Research (2026 CHARM Conference) |
|---|-----------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1 | I enjoyed the session                                     | Thanks so much for offering these sessions.                         | Loved the workshop session Going to try elicit.                                             |
| 2 | Training was excellent                                    | Presenters were great and engaging!                                 | Additional AI research workshops                                                            |
| 3 | Very good presentation                                    | That was really helpful and informative, thank you!                 | Do more of these sessions please.                                                           |

To complement face-to-face delivery, the library developed on-demand training sessions bookable from the CHS Library's webpage, enabling staff to request training materials at a time and place that best suited their professional needs. Demand for the AI training has continued to grow, driven by increasing organisational interest in AI technologies, word of mouth recommendations from participants, and ongoing engagement between librarians and their clients. This uptake highlights the expanding role of health libraries in supporting digital transformation and building workforce readiness for emerging technologies.

Through the development and delivery of AI literacy education, the CHS Library is contributing to organisational capability, supporting responsible AI adoption, and reinforcing the evolving role of health librarians as educators, technology facilitators, and trusted partners in healthcare innovation. As AI continues to transform health service delivery, research, and knowledge management, health libraries are uniquely positioned to equip healthcare professionals with the skills required to critically evaluate and effectively utilise these emerging technologies.

The training focuses on the following best practices, mostly from authoritative sources such as the ACT Government Staff Intranet, titled "AI and Data Hub", which provides generic information related to AI, and this information is further contextualised into the health specific domain by the library staff.

### **Key considerations for the responsible use of AI**

The considerations outlined below provide a baseline guidance for the responsible implementation and use of AI across professional, research, and clinical environments. Adherence to these principles can facilitate the safe, ethical, and effective integration of AI technologies while maintaining organisational, professional, and patient care standards.

### **RAISE recommendations and guidance**

The Responsible use of AI in Evidence Synthesis (RAISE) project is a collaborative international initiative hosted on the Open Science Framework (OSF) (Open Science Framework, 2024). Its purpose is to provide practical recommendations and guidance for the responsible, transparent, and reliable use of AI across the evidence synthesis ecosystem, including systematic reviews, rapid reviews, scoping reviews, guideline development, and related research activities. The initiative involves experts from various organizations, such as Cochrane, Campbell Collaboration, JBI, the Collaboration for Environmental Evidence (CEE) and other stakeholders.

The RAISE framework comprises three complementary guidance documents, each providing a particular focus and set of recommendations within the broader framework (Cochrane, 2025). These documents are outlined below:

RAISE 1 (recommendations) with recommendations for practice for the main roles in the evidence synthesis ecosystem to enhance collaboration & communication for the transparent and reliable use of AI in evidence synthesis.

RAISE 2 (building and evaluating) with guidance on building and evaluating AI evidence synthesis tools, which focuses on determining if an AI tool does what it claims to do to an acceptable standard, including how to build and validate AI tools, conduct evaluations to build a cumulative evidence base, including performance metrics to consider, and report evaluations.

RAISE 3 (selecting and using) with guidance on selecting and using AI evidence synthesis tools, which focuses on understanding whether an AI tool can be used for a specific evidence synthesis, including how to assess, select and use an AI tool, including ethical, legal and regulatory considerations, & the current state of AI tools for evidence synthesis.

### **National Health and Medical Research Council (NHMRC)**

The National Health and Medical Research Council (2025) has developed guidance to support researchers and human research ethics committees in the design, review, and assessment of research involving AI. The guidance identifies six key areas of ethical and methodological consideration: (1) human agency and oversight, (2) transparency and explainability, (3) bias and representation, (4) technical robustness and safety, (5) data reliability, and (6) data governance and security. These domains provide a framework for evaluating the responsible development and use of AI within health and medical research.

These six domains provide a comprehensive framework for assessing the ethical, methodological, and governance implications of AI enabled research. Together, they promote responsible AI use by ensuring appropriate human oversight, transparency, fairness, safety, data quality, and robust data governance throughout the research lifecycle

### **Institutional policies**

Organisations require employees to comply with institutional policies and guidelines governing the use of AI in the workplace to ensure regulatory compliance and promote the adoption of best practices.

As such, the Australian Capital Territory Government (2025) requires staff to ensure that their AI usage adheres to the following protocols:

- develop and use AI initiatives in alignment with directorate strategic plans, and broader ACT Government priorities
- demonstrate community or government advantages, such as improved service delivery or enhanced decision-making capabilities
- comply with all relevant privacy, security, and data protection laws
- implement strategies to minimise potential biases and risks in AI algorithms
- ensure that decisions made by the AI system are subject to human review and intervention.

### **Professional bodies**

In Australia, professional and regulatory health organisations, such as the Australian Medical Association (AMA), the Royal Australasian College of Physicians (RACP), and the Australian Health Practitioner Regulation Agency (AHPRA), among other professional associations, have published guidance to support the adoption, implementation, and responsible use of AI in clinical and professional practice. These frameworks aim to ensure that AI is applied ethically, safely, and in accordance with established professional, regulatory, and patient care standards.

## Ethics framework

The Australian Capital Territory (ACT) Government has adopted an ACT AI Assurance Framework and the ACT Government Artificial Intelligence Policy aligned with the National AI Ethics Principles (Department of Industry, Science and Resources, 2025).

This framework comprises eight principles intended to guide the responsible design, development, deployment, and use of AI systems. Collectively, these principles promote the use of AI in ways that benefit individuals, society, and the environment while ensuring fairness, transparency, accountability, and respect for human rights.

The eight (8) principles are presented in the table below:

|   | <b>Principles</b>                            | <b>Narrative</b>                                                                                                                                                                                       |
|---|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Human, societal, and environmental wellbeing | AI systems should benefit individuals, society, and the environment.                                                                                                                                   |
| 2 | Human-centred values                         | AI systems should respect human rights, diversity, and the autonomy of individuals.                                                                                                                    |
| 3 | Fairness                                     | AI systems should be inclusive and accessible and should not involve or result in unfair discrimination against individuals, communities or groups.                                                    |
| 4 | Privacy protection and security              | AI systems should respect and uphold privacy rights and data protection and ensure the security of data.                                                                                               |
| 5 | Reliability and safety                       | AI systems should reliably operate in accordance with their intended purpose                                                                                                                           |
| 6 | Transparency and explainability              | There should be transparency and responsible disclosure so people can understand when they are being significantly impacted by AI and can find out when an AI system is engaging with them.            |
| 7 | Contestability                               | When an AI system significantly impacts a person, community, group or environment, there should be a timely process to allow people to challenge the use or outcomes of the AI system.                 |
| 8 | Accountability                               | People responsible for the different phases of the AI system lifecycle should be identifiable and accountable for the outcomes of the AI systems, and human oversight of AI systems should be enabled. |

## Prompt engineering

Numerous prompt engineering frameworks have been proposed to support the effective use of generative AI tools. The selection of an appropriate framework depends on the nature, purpose, and context of the query. A commonly used approach involves specifying: (1) a persona or role for the AI to adopt, (2) the



intended goal or task, (3) the target audience, and (4) the preferred style and format of the output.

For example, a prompt may instruct the AI to act as a clinician, explain handwashing to individuals with limited English proficiency, present information in simple language and bullet points, provide links to authoritative medical sources, and generate a brief explanatory paragraph.

Figure 2 illustrates this framework and provides an example of its application. This framework was adapted from guidance available on the ACT Government intranet and the example devised by the CHS Librarians.

Figure 2: prompt engineering framework with an example.



Adopted from the ACT Government intranet

Regardless of the framework used, outputs generated by AI tools should always be reviewed and verified by human users. Human oversight (human in the loop) is necessary to assess accuracy, reliability, quality, relevance, and potential bias, as generative AI systems may produce incorrect, misleading, or fabricated information, a phenomenon commonly referred to as hallucination.

### Core principles and best practices for responsible AI use

The literature identifies several widely recognised best practices for the safe, ethical, and effective use of AI technologies, including but not limited to the following:

- use only institutionally approved AI tools and do not enter sensitive patient information (unless explicitly authorised).
- verify AI generated information against authoritative and evidence-based sources.
- refine outputs through targeted and context specific prompting.
- critically evaluate AI generated responses for accuracy, relevance, and completeness.
- apply professional judgement and subject matter expertise when interpreting and using AI outputs.

- maintain human oversight in decision making processes; AI should inform, not determine or make decisions.
- recognise that AI is intended to augment human capabilities rather than replace professional expertise.
- comply with institutional data privacy, data protection, and information governance and AI policies.
- assess and mitigate biased information generated by AI platforms.
- maintain transparency and disclosure of AI usage.
- obtain informed consent where required and appropriate.

These practices support the responsible, ethical, and accountable use of AI while ensuring that human expertise (human in the loop) remains central to professional and clinical decision making.

### **Citing AI generated output**

Many major academic publishers, including Wiley, Sage, and Taylor & Francis, require authors to disclose the use of AI technologies in the conduct and reporting of research. Transparent disclosure of AI use is increasingly recognised as an essential component of research integrity, accountability, and ethical scholarly communication. To support compliance with publisher requirements, authors may utilise tools such as the [Artificial Intelligence Disclosure \(AID\) Statement Builder](#), developed by Weaver (2026), which assists in the accurate documentation, acknowledgement, and citation of AI technologies used during the research and publication process. Such tools facilitate responsible and ethical reporting by ensuring that AI-assisted contributions are disclosed in a clear, consistent, and transparent manner.

### **Conclusion**

Artificial intelligence is increasingly integrated into healthcare, research, and professional practice, offering substantial opportunities to enhance efficiency, support decision making, and improve research and patient outcomes. However, alongside these benefits, AI presents important risks and limitations that require careful consideration. As the adoption of AI technologies continues to expand, their use must align with institutional policies, ethical and legal obligations, publisher requirements, and relevant professional and industry standards.

Responsible and accountable AI use depends on the application of critical thinking, professional judgement, and thorough verification of AI generated content. Users must critically evaluate the accuracy, reliability, and contextual appropriateness of AI outputs before incorporating them into research, clinical, or professional activities. This process should be supported by effective prompting practices, including iterative refinement through re-prompting and systematic re-evaluation of outputs. By maintaining appropriate oversight and exercising informed judgement, users can

maximise the benefits of AI while mitigating potential risks and ensuring the integrity, quality, and trustworthiness of their work.

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## Appendix 1. Learning Outcomes of the AI Library Training Program at CHS Library

| Training session  | AI for Healthcare Staff: Skills, Knowledge, and Resources                                                                                                                                                                                                                                                            | AI as Research Partner: Applications in Health and Medical Research                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blurb             | <ul style="list-style-type: none"> <li>• Build practical skills for using AI in healthcare with AI for Healthcare Staff.</li> <li>• This session covers what AI can and can't do, your ACT Government obligations, good practice, effective prompting, and where to find trusted information and support.</li> </ul> | <ul style="list-style-type: none"> <li>• Explore how artificial intelligence can support health and medical research in AI as Research Partner.</li> <li>• This session covers practical applications, risks and benefits, responsible use (based on RAISE guidelines), and how to evaluate and select appropriate tools, with guidance on further resources and support.</li> </ul> |
| Learning Outcomes | <ul style="list-style-type: none"> <li>• Understand what AI can and can't do</li> <li>• Understand your ACT Government obligations</li> <li>• Awareness of good practice for AI in healthcare</li> <li>• How to prompt effectively</li> <li>• Where to get more information and support</li> </ul>                   | <ul style="list-style-type: none"> <li>• Understand how AI can be used in research</li> <li>• Understand risks and benefits of AI tools for research</li> <li>• Awareness of Responsible Use of AI in Evidence Synthesis (RAISE)</li> <li>• How to evaluate and select AI tools for research</li> <li>• Where to go for more information and support</li> </ul>                      |

**Source:** [CHS Library and Multimedia Training Calendar - Upcoming Events](#)