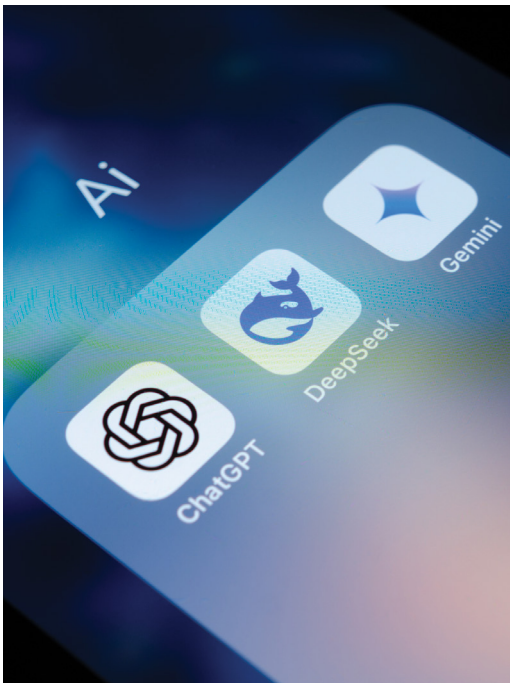
Augmenting apprenticeship:
A discussion paper on integrating generative artificial intelligence into postgraduate general practice training



Michael Tran, Lambert Schuwirth, Alexandra Davidson, Tanisha Jowsey

Background
Generative artificial intelligence (GenAI) is rapidly transforming medical education. In general practice training, GenAI offers new opportunities to scaffold learning, support autonomy and enhance access to knowledge.

Objective
This article identifies use cases, learning value, risk management, necessary guardrails and a framework for the safe and effective implementation of GenAI in postgraduate general practice training.

Discussion
Postgraduate general practice learners differ from undergraduates in their self-directed, assessment-driven and apprenticeship-based learning. GenAI can simulate dialogic engagement, personalising feedback and supporting reflective practice. GenAI adds genuine learning value by promoting higher-order thinking, supporting self-directed learning and enhancing access, particularly in rural or remote contexts. However, risks include epistemic opacity, skill decay, bias and erosion of humanistic learning. GenAI should augment, not replace, human mentorship and relational learning. Thoughtful integration, guided by pedagogical and ethical frameworks, can support the development of competent, empathetic and future-ready general practitioners.

THE RAPID EVOLUTION of generative artificial intelligence (GenAI) is reshaping the medical education landscape. These technologies offer new possibilities for augmenting learning, supporting autonomy and enhancing access to knowledge, especially in general practice training, where learning is embedded in complex, relational and uncertain clinical environments.[1,2]

Postgraduate general practice learners differ markedly from their undergraduate counterparts. Their education is more self-directed and assessment-driven, and it is situated within an apprenticeship model that prioritises real-world experience, reflective practice and professional identity formation.[3–5] These learners must navigate critical learning junctures where concepts such as managing uncertainty, learning and understanding complex health systems, prioritising relationships and treating patients beyond disease labels represent transformative learning moments.[6–8] These concepts are deeply embedded in the sociocultural and relational fabric of general practice, requiring learners to develop contextual judgement, reflective capacity and professional empathy. Unlike undergraduate education, which is often structured and didactic, general practice training is characterised by autonomy, longitudinal supervision and real-time clinical decision making in ambiguous environments.[4,5]

The apprenticeship model fosters early identity formation through mentorship and authentic patient-facing experiences. However, it also presents challenges: variability in supervision, limited peer interaction and the need for just-in-time learning support. These conditions create fertile ground for the integration of GenAI technologies, which can offer personalised support, simulate dialogic engagement and support reflective practice.[9]

Within a social constructivist framework, GenAI may serve as a 'more knowledgeable other',[1] facilitating learning through co-construction of knowledge, iterative dialogue and contextualised feedback.[10,11] Trainee general practitioners (GPs) often work in isolation, unlike their peers in other specialties who benefit from collaborative learning environments. GenAI could augment valuable peer-to-peer learning experiences for GPs. Experiential learning theory further supports GenAI's role in helping learners transform clinical experiences into deeper understanding through reflection and application.[12] These pedagogical models also underscore GenAI's limitations: it cannot replicate embodied cognition,[13] interpersonal nuance or the tacit knowledge gained through human mentorship. The integration of GenAI into general practice training raises a critical enquiry: where does AI genuinely enhance learning, what risks and limitations must be addressed, and what safeguards are necessary to ensure its ethical and effective use in general practice training? The central concerns raised by these questions have historically accompanied many technological innovations (Box 1).

Box 1. Plato on the perils of the invention of writing

Your invention (script) will enable them to hear many things without being properly taught, and they will imagine that they have come to know much while for the most part they will know nothing. And they will be difficult to get along with, since they will merely appear to be wise instead of really being so.

–Plato's Phaedrus, 275a

This discussion paper explores the use cases and integration of GenAI in general practice training. Drawing on social constructivist and experiential learning theories, we examine potential uses of GenAI by registrars and educators. We propose a framework for responsible GenAI integration that balances innovation with caution, aiming to guide and support the development of competent, empathetic and future-ready GPs.[12,14] GenAI may augment, but not replace, the relational, contextual and reflective dimensions of learning that are central to general practice education.

Use cases of GenAI in general practice training

The integration of GenAI into general practice training offers a range of use cases that align with the pedagogical demands of the apprenticeship model. These use cases reflect both the strengths of GenAI technologies and the specific needs of postgraduate learners navigating complex, relational and uncertain clinical environments (Table 1).

Learning value: Where GenAI adds genuine benefit

GenAI offers distinct learning value in general practice training when used to augment, and not replace, core educational processes.

There is understandable existential and philosophical anxiety from educators when considering the implications of GenAI that can perform many cognitive tasks, once considered uniquely human, and how these challenge our sense of purpose and agency. Although GenAI can simulate and stimulate thought, it cannot replicate the lived experience of thinking as a human process, one that involves embodied

Table 1. Generative artificial intelligence (GenAI) use learning cases

Use case	Description
1. GenAI as a 'more knowledgeable other'	Drawing on social constructivist theory, GenAI can simulate the role of a 'more knowledgeable other' by scaffolding learning through dialogic engagement, personalised feedback and iterative refinement of understanding.[1] This is particularly valuable in general practice training, where supervision and peer-to-peer learning may be intermittent, and learners must often make decisions independently. GenAI can help bridge gaps in supervision by offering context-sensitive support and promoting reflective practice. This scaffolding should not be confused with that based around what we understand to be 'verified knowledge', which is not GenAI's promise, because co-creation of knowledge is based on its output of a reorganisation of linguistic tokens generated when a query is entered. More than ever, the learner must be prepared to question the 'more knowledgeable other'.
2. Conversational agents for reflective practice and empathy	An inherent strength of large language models is in simulating empathetic dialogue,[33] encouraging learners to reflect on clinical decisions, patient interactions and ethical dilemmas. This supports the development of relational competencies central to general practice. GenAI-facilitated reflection may also help learners navigate threshold concepts such as uncertainty and complexity.[3,5]
3. Simulation and case-based learning	GenAI can generate interactive clinical scenarios that mirror real-world complexity, allowing learners to test hypotheses, compare reasoning and receive feedback. By providing a simulacrum of simulation-based learning, GenAI can support experiential learning and can be tailored to individual learning needs.[17,34] GenAI can also provide opportunities to explore ethical dimensions and interdisciplinary collaboration. GenAI has demonstrated utility in creating simulations with diverse cultural and socioeconomic backgrounds[35] including rural and underserved populations,[36] overcoming geographic isolation and systemic bias in supporting Aboriginal and Torres Strait Islander students in medical education,[37] and providing culturally nuanced[38] and emotionally complex conversations and interactions with virtual patients.[39]
4. Personalised learning and feedback	GenAI tools can adapt to the learner's level of expertise, prior knowledge and preferred learning approaches, offering individualised pathways through clinical content. This supports just-in-time learning and helps registrars manage the breadth of general practice presentations.[10,11] Personalised feedback can also enhance metacognitive awareness and promote deeper learning. In addition, AI can learn from the learner's interactions and act as a coach or a teacher who really 'knows' their student.
5. Support for self-directed and competency-based learning	GenAI can assist in identifying knowledge gaps, curating relevant resources and tracking progress toward competency milestones. This aligns with the self-directed nature of general practice training and supports learners in managing their own development.[9]
6. Augmentation of clinical reasoning	Although GenAI cannot replace human judgement, it can augment clinical reasoning by offering alternative perspectives, prompting critical evaluation, recommending literature and guidelines, and supporting decision making under uncertainty. This is particularly useful in early training stages, where learners benefit from structured cognitive support.[4,40]
7. Narrative evaluation and progress mapping	GenAI can support rich, narrative-based evaluation by synthesising learner interactions, reflections and performance data into meaningful progress reports. Unlike traditional grading systems that reduce complex learning to binary outcomes (eg pass/fail), artificial intelligence can provide nuanced insights into a learner's development over time. This includes identifying patterns in clinical reasoning, communication style and ethical decision making. Such narrative feedback aligns with competency-based education and supports formative assessment, helping educators and learners engage in deeper conversations about growth, readiness and future learning goals.

cognition, emotional engagement and socially situated meaning-making. Drawing on constructivist and experiential learning theories, this kind of effortful thinking fosters deeper understanding, ethical reasoning and adaptive expertise, qualities that emerge through reflection, interpretation and relational context, which AI alone cannot fully support or replicate. Cognitive psychology, as popularised in the work of Daniel Kahneman, suggests that deep learning occurs through effortful engagement with construction of thoughts in an orderly series of deliberate steps: something he termed System 2 thinking.[15] GenAI tools may bypass this slower thinking, mimicking System 1 thinking, which is fast and intuitive. Mental effort, while being aversive, serves as the mechanism by which leaners build durable knowledge, critical thinking, foundational reasoning and problem-solving skills that are retained long term. To value effortful learning in the context of GenAI means to reassert the role of the learner in embracing the creative, interpretive and ethical dimensions of human thought that machines cannot truly inhabit.

Promoting higher-order cognitive engagement

GenAI can facilitate learning at the upper levels of Miller's pyramid,[16] including analysis, synthesis and evaluation. Through dialogic interaction, learners can engage in critical reasoning, explore differential diagnoses and reflect on ethical dimensions of care. By generating realistic clinical scenarios and prompting reflective dialogue, GenAI supports experiential learning. It enables learners to rehearse decision making; receive feedback; and refine their reasoning in a safe, simulated environment; which complements real-world experience and helps consolidate learning.[17] This supports the development of clinical judgement and decision making under uncertainty, hallmarks of more competent and autonomous practice.[1]

GenAI tools are adaptive, and they tend to be built with polite and servile algorithms. The risk to learners that such servility poses is that GenAI limits learner decision making and amplifies poor reasoning. Learners must, therefore, remain vigilant in their critical appraisal of GenAI outputs, which is easier said than done. The lack of critical appraisal has been described as 'epistemic automation'.[18] To mitigate this risk, GenAI can be embedded within structured pedagogical strategies that include educator oversight and that encourage critical appraisal and reflective dialogue in the use of prompts, ensuring learners interrogate GenAI reasoning. Such scaffolding preserves epistemic agency and promotes deliberate engagement with complexity rather than passive consumption of AI-generated outputs.

Supporting accessible self-directed and reflective learning

Postgraduate general practice learners often operate autonomously, with limited access to immediate supervision, particularly in rural and remote settings.[19] GenAI can serve as a learning companion, offering structure, feedback and opportunities for reflection, adapted to a learner's needs on the basis of prior knowledge and preferred learning styles.[10,11] This approach aligns with the apprenticeship model and supports learners in navigating threshold concepts such as complexity and ambiguity.[3,5] GenAI tools can democratise access to learning by providing consistent, feasible and scalable support across diverse training environments. This is particularly valuable in rural or remote placements, where registrars may experience professional isolation.[19] GenAI can offer continuity of feedback and simulate peer or supervisor interaction, helping to mitigate disparities in educational access.

GenAI can theoretically support just-in-time learning during patient encounters by summarising literature or surfacing current relevant guidelines and, from these, offering evidence-based recommendations.[20] Current evidence highlights significant limitations with GenAI tools for reliable identification of best-quality evidence, data extraction and synthesis.[21] GenAI tools currently tend to lack epistemic transparency and may produce plausible but unverified outputs. For these reasons, at this stage, we recommend just-in-time use of GenAI should support clinician inquiry rather than be used as a source of definitive knowledge. We note that this is a rapidly changing field, and GenAI reliability for sourcing appropriate evidence is increasing.

Limitations and risks

Although GenAI offers promising opportunities, its integration must be approached with caution. Several limitations and risks may affect the quality, safety and equity of postgraduate medical education.

Misuse, skill decay and over-reliance

A common misconception is that GenAI functions like a search engine. Search engines retrieve information from vast information points and link to original sources. Although GenAI tools also retrieve information, the processes they engage to arrive at outputs are often obscure. The generated responses are additionally informed by the reorganisation of linguistic tokens on the basis of probabilistic patterns and generated dynamically. Despite significant advances in GenAI capability, these tools remain at risk of hallucination and bias. This epistemic opacity also poses risks when learners rely on GenAI for factual or clinical guidance without critical appraisal.[13,22] When learners rely solely on GenAI responses, learning is decidedly unstructured and not scaffolded. An associated concern is that frequent GenAI use will precipitate reduced engagement with foundational learning processes including critical thinking and clinical reasoning.[23] Over-reliance on AI-generated answers may undermine the development of independent judgement, particularly in early training stages.[24] Independent judgement is important in a relational speciality such as general practice where the humanistic consultation skills of clinical reasoning and shared decision making are inherently complex and unlikely to benefit from true artificial general intelligence, where scalability limits mean that reasoning models demonstrate 'performance collapsing to zero' when the complexity of puzzles extends beyond a modest threshold.[25] Patients still prefer human interaction even in the age of artificial intelligence,[26] and these skills are unlikely to be replaceable by machines.

GenAI cannot replicate the embodied, empathetic and interpersonal dimensions of medical education. There is a risk that learners may prioritise efficiency over relational depth, potentially diminishing the humanistic aspects of general practice.[27] Effective learning requires effort and engagement; it cannot be outsourced to AI. Attempting to automate the learning process

risks depriving learners of the opportunity to make mistakes, develop heuristics and cultivate a personal, context-sensitive understanding of their practice.

Bias, inequity and privacy concerns

GenAI models are trained on large datasets that may contain embedded biases, including racism and misogyny.[28] These biases can be perpetuated or amplified in GenAI outputs, leading to inequitable recommendations or reinforcing stereotypes. This is particularly concerning in general practice, where patient presentations are diverse and context dependent. Similarly, unequal access to AI tools may exacerbate educational disparities, particularly for learners in resource-limited settings. The use of GenAI in educational contexts raises significant concerns about the handling of sensitive data, particularly when case details include identifiers such as age, diagnosis or genetic information. Without robust safeguards, there is a risk that such data could be exposed or misused, compromising confidentiality and trust and constituting ethical violations. One potential mitigation strategy is 'sandboxing', that is, restricting the GenAI's operations within a controlled environment or through an application programming interface that enforces strict data governance, preventing external transmission and ensuring compliance with privacy standards.

Guardrails for safe integration

To ensure that GenAI enhances rather than undermines general practice training, a set of pedagogical, ethical and operational guardrails must be established. These guardrails should support responsible use, mitigate risks and align AI integration with medical education core values.

When GenAI is embedded within structured learning environments, it should be guided by educators familiar with AI who can help learners contextualise its outputs, assess its relevance, integrate it into clinical reasoning and prompt critical reflection.[23] This human-in-the-loop approach preserves the apprenticeship model[1,12] but poses the question of how the human value and the AI value can be synergistic for learning. Equitable access to GenAI tools must be prioritised to prevent widening disparities in educational quality and opportunity.[29]

Curricula must evolve to include GenAI literacy, using AI in an ethically responsible way, and critical appraisal skills. Learners must be equipped to understand the capabilities and limitations of GenAI, including its epistemic boundaries, potential biases and lack of transparency. Ethics education should address issues of accountability, consent and the responsible use of GenAI in clinical and educational contexts.[2,30] Institutions should ensure compliance with privacy regulations and promote transparency in how AI systems handle information.[31] Assessment strategies should be reimagined to evaluate knowledge acquisition and the safe and effective use of GenAI tools. Programmatic assessment, oral examinations and in-person clinical evaluations may offer greater resistance to GenAI misuse and better reflect authentic learning.[32]

Given the rapid pace of GenAI development, guardrails must be dynamic and responsive. Institutions should establish feedback loops, engage stakeholders in co-design and continuously evaluate the impact of AI on learning outcomes and professional development.[14] Additionally, institutions should develop protocols and guidelines for educators, supervisors and learners on the safe and equitable use of GenAI tools that have been assessed on the basis of their appropriateness for education and learning, data storage and privacy.

Conclusion

The integration of GenAI into general practice training presents both a transformative opportunity and a complex challenge. When thoughtfully applied, GenAI can augment learning, support autonomy and enhance access to reflective and contextual educational experiences. It offers genuine value in promoting higher-order thinking, personalising feedback and augmenting experiential learning, particularly within the apprenticeship model that defines postgraduate general practice education.

However, these benefits must be balanced against significant risks, including epistemic opacity, skill decay, bias and the erosion of humanistic learning. AI is not a substitute for supervision, mentorship or relational depth. Its use must be guided by robust pedagogical frameworks, ethical guardrails and ongoing educator oversight. The goal is not to resist innovation but to shape it, ensuring that GenAI serves the development of competent, empathetic and future-ready GPs.

Key points

- GenAI can enhance postgraduate general practice training by supporting experiential, relational and self-directed learning within the apprenticeship model.
- Key use cases include simulation-based learning, personalised feedback, conversational agents for reflective practice, and narrative progress mapping.
- Risks such as epistemic opacity, skill decay and bias require careful management through educator oversight, curriculum reform and ethical guardrails.
- A framework for responsible integration is proposed to ensure GenAI augments, not replaces, human mentorship and supports the development of competent, empathetic and future-ready GPs.

Authors

Michael Tran MBBS (Hons), BSc (Med) Hons, DCH, FRACGP, FHEA, AFANZAHPE, Senior Lecturer, Discipline of General Practice, School of Clinical Medicine, University of New South Wales, Sydney, NSW; General Practitioner, Erskineville Doctors, Sydney, NSW

Lambert Schuwirth MD, PhD, Evaluation and Research Lead, New Medical Education Australia Pty Ltd, Brisbane, Qld

Alexandra Davidson BSc, MNDP, PhD, Post Doctoral Research Fellow, Bond University Faculty of Health Sciences & Medicine, Gold Coast, Qld

Tanisha Jowsey BA Hons, MA, PhD, FANZAHPE, Associate Professor, Bond University Faculty of Health Sciences & Medicine, Gold Coast, Qld

Competing interests: None.

Funding: None.

Provenance and peer review: Commissioned, externally peer reviewed.

AI declaration: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

Correspondence to:
michael.m.tran@unsw.edu.au

Acknowledgements

MT is the recipient of a PhD top-up Scholarship from The Royal Australian College of General Practitioners Foundation. His PhD is supported through an Australian Government Research Training Program Scholarship.

References

1. Tran M, Balasooriya C, Semmler C, Rhee J. Generative artificial intelligence: The 'more knowledgeable other' in a social constructivist

framework of medical education. NPJ Digit Med 2025;8(1):430. doi: 10.1038/s41746-025-01823-8.
2. Kamalov F, Santandreu Calonge D, Gurrib I. New era of artificial intelligence in education: Towards a sustainable multifaceted revolution. Sustainability (Basel) 2023;15(16):12451. doi: 10.3390/su151612451.
3. Hall K, Chae A. Identifying threshold concepts in postgraduate general practice training: A focus group, qualitative study. BMJ Open 2022;12(6):e060442. doi: 10.1136/bmjopen-2021-060442.
4. Tran M, Rhee J, Hu W, Magin P, Shulruf B. General practice trainee, supervisor and educator perspectives on the transitions in postgraduate training: A scoping review. Fam Med Community Health 2024;12(4):e003002. doi: 10.1136/fmch-2024-003002.
5. Becker C, Stengel S, Roos M, Altiner A, Schwill S. Starting postgraduate medical training in general practice with a rotation in general practice – A qualitative study on experiences and effects. GMS J Med Educ 2024;41(5):Doc53.
6. Salisbury H. Helen Salisbury: Experts at the front door. BMJ 2023;381:856. doi: 10.1136/bmj.p856.
7. Hindi AMK, Willis SC, Schafheutle EI. Using communities of practice as a lens for exploring experiential pharmacy learning in general practice: Are communities of practice the way forward in changing the training culture in pharmacy? BMC Med Educ 2022;22(1):12. doi: 10.1186/s12909-021-03079-8.
8. Mezirow J. Transformative learning: Theory to practice. New Dir Adult Contin Educ 1997;1997(74):5–12. doi: 10.1002/ace.7401.
9. Mady A, Niese B. Augmenting AI and human capabilities in competency-based learning. Computers and People Research Conference; 2022; Atlanta, Georgia. Association for Computing Machinery, 2023; p. 1–9. doi: 10.1145/3510606.3550210.
10. Chen Z. Artificial intelligence-virtual trainer: Innovative didactics aimed at personalized training needs. J Knowl Econ 2022;14(2):2007–25. doi: 10.1007/s13132-022-00985-0.
11. Sapci AH, Sapci HA. Artificial intelligence education and tools for medical and health informatics students: Systematic review. JMIR Med Educ 2020;6(1):e19285. doi: 10.2196/19285.
12. Bearman M, Ajjawi R. Learning to work with the black box: Pedagogy for a world with artificial intelligence. Br J Educ Technol 2023;54(5):1160–73. doi: 10.1111/bjet.13337.
13. Tran M, Balasooriya C, Jonnagaddala J, et al. Situating governance and regulatory concerns for generative artificial intelligence and large language models in medical education. NPJ Digit Med 2025;8(1):315. doi: 10.1038/s41746-025-01721-z.
14. Lexman R, Krishna A, Sam M, in press. AI guardrails in business and education: Bridging minds and markets. Dev Learn Organ 2025. doi: 10.1108/DLO-01-2025-0001.
15. Kahneman D. Thinking, fast and slow. Farrar, Straus and Giroux, 2011.
16. Witheridge A, Ferns G, Scott-Smith W. Revisiting Miller's pyramid in medical education: The gap between traditional assessment and diagnostic reasoning. Int J Med Educ 2019;10:191–92. doi: 10.5116/ijme.5d9b.0c37.
17. Ossa LA, Rost M, Lorenzini G, Shaw DM, Elger BS. A smarter perspective: Learning with and from AI-cases. Artif Intell Med 2023;135:102458. doi: 10.1016/j.artmed.2022.102458.
18. Wu J, Lee Y, Chai C, Tsai C. Strengthening human epistemic agency in the symbiotic learning partnership with generative artificial intelligence. Educ Res 2025;54(6):358–68. doi: 10.3102/0013189X251333628.
19. Kanakis K, Young L, Reeve C, Hays R, Gupta TS, Malau-Aduli B. How does GP training impact rural and remote underserved communities? Exploring community and professional perceptions. BMC Health Serv Res 2020;20(1):812. doi: 10.1186/s12913-020-05684-7.
20. Yang B, Lee JJ, Tsai T, et al. Transforming the primary care journey with generative AI: A foundation model to boost efficiency, quality, and engagement. J Gen Intern Med 2025. doi: 10.1007/s11606-025-09716-y.
21. Clark J, Barton B, Albarqouni L, et al. Generative artificial intelligence use in evidence synthesis: A systematic review. Res Synth Methods 2025;16(4):601–19. doi: 10.1017/rsm.2025.16.
22. Kelly CJ, Karthikesalingam A, Suleyman M, Corrado G, King D. Key challenges for delivering clinical impact with artificial intelligence. BMC Med 2019;17(1):195. doi: 10.1186/s12916-019-1426-2.
23. Abdulnour RE, Gin B, Boscardin CK. Educational strategies for clinical supervision of artificial intelligence use. N Engl J Med 2025;393(8):786–97. doi: 10.1056/NEJMra2503232.
24. Müller MEB, Laupichler MC. Medical students learning about AI – With AI? Med Educ 2023;57(11):1156. doi: 10.1111/medu.15211.
25. Shojaee P, Mirzadeh I, Alizadeh K, Horton M, Bengio S, Farajtabar M. The illusion of thinking: Understanding the strengths and limitations of reasoning models via the lens of problem complexity. arXiv, 2025. doi: 10.48550/arXiv.2506.06941.
26. Longoni C, Bonezzi A, Morewedge CK. Resistance to medical artificial intelligence. J Consum Res 2019;46(4):629–50. doi: 10.1093/jcr/ucz013.
27. van der Niet AG, Bleakley A. Where medical education meets artificial intelligence: 'Does technology care?'. Med Educ 2021;55(1):30–36. doi: 10.1111/medu.14131.
28. Webster CS, Jowsey T. Artificial intelligence must operate ethically in health care and not be prone to racist or sexist biases. Anesth Analg 2025;140(5):1099–104. doi: 10.1213/ANE.0000000000007140.
29. Zack T, Lehman E, Suzgun M, et al. Assessing the potential of GPT-4 to perpetuate racial and gender biases in health care: A model evaluation study. Lancet Digit Health 2024;6(1):e12–22. doi: 10.1016/S2589-7500(23)00225-X.
30. Payyambally S. AI guardrails and best practices for ethical, safe, and effective AI deployment. Int J Sci Res 2025;14(3):1–4 (IJSR). doi: 10.21275/SR25301235922.
31. Jonnagaddala J, Wong ZS. Privacy preserving strategies for electronic health records in the era of large language models. NPJ Digit Med 2025;8(1):34. doi: 10.1038/s41746-025-01429-0.
32. Williams A. Integrating artificial intelligence into higher education assessment. Intersection: A Journal at the Intersection of Assessment and Learning 2025;6(1):128–54. doi: 10.61669/001c.131915.
33. Ovsyannikova D, de Mello VO, Inzlicht M. Third-party evaluators perceive AI as more compassionate than expert humans. Commun Psychol 2025;3(1):4. doi: 10.1038/s44271-024-00182-6.
34. Elendu C, Amaechi DC, Okatta AU, et al. The impact of simulation-based training in medical education: A review. Medicine (Baltimore) 2024;103(27):e38813. doi: 10.1097/MD.0000000000038813.
35. Lumeto. AI in healthcare training: Using AI in medical education. Lumeto, 2025. Available at https://lumeto.com/blog/ai-in-healthcare-training [Accessed 11 October 2025].
36. McGrew HC, Faucett K, Russell RG, et al. Telehealth simulations with generative artificial intelligence in midwifery education: Practice for person-centered and culturally responsive care. J Midwifery Womens Health 2025;70(6):932–38. doi: 10.1111/jmwh.70015.
37. Oluwatobi Akefe I, Aderonke Adegoke V, Akefe E, Schweitzer D, Bolaji S. An innovative approach to medical education: Leveraging generative artificial intelligence to promote inclusion and support for Indigenous students. Trends High Educ 2025;4(3):36. doi: 10.3390/higheredu4030036.
38. Aziz Z, Kiegaldie D. Leveraging AI simulations for enhancing cultural competence in healthcare: Insights from the COIL program. 2025.
39. Chu SN, Goodell AJ. Synthetic patients: Simulating difficult conversations with multimodal generative AI for medical education. arXiv, 2024.
40. Wilkens U. Artificial intelligence in the workplace – A double-edged sword. IJILT 2020;37(5):253–65. doi: 10.1108/IJILT-02-2020-0022.

correspondence **ajgp@racgp.org.au**