Feedback to Department of Health and Aged Care on Safe and Responsible Artificial Intelligence in Health Care

About the Australian College of Rural and Remote Medicine (ACRRM)

ACRRM's vision is *healthy rural, remote and First Nations communities through excellence, social accountability and innovation*.

The College works to *define, promote and deliver quality standards of medical practice for rural, remote and First Nations communities through a skilled and dedicated Rural Generalist profession*. It provides a quality Fellowship program including training, professional development, and clinical practice standards; and support and advocacy services for rural doctors and the communities they serve.

ACRRM has more than 5000 rural doctor members including 1000 registrars, living and working in rural, remote, and Aboriginal and Torres Strait Islander communities across Australia and further afield. College members deliver expert front line medical care in a diverse range of settings including general practices, hospitals, emergency departments, aboriginal medical services, and other remote settings such as RFDS and the Australian Antarctic Division.

Background

ACRRM welcomes the opportunity to provide a submission to the Department of Health and Aged Care - Digital and Service Design Branch public consultation on ‘Safe and Responsible Artificial Intelligence in Health Care – Legislation and Regulation Review.’

Artificial Intelligence (AI) typically refers to computational technologies that mimic aspects of human intelligence, including reasoning, deep learning, adaptation, interaction, and sensory perceptionas.[1] As a leading medical education institution, ACRRM is committed to integrating Artificial Intelligence (AI) into healthcare education and practice in an ethical, transparent, and patient-centred manner. Throughout this submission we use artificial intelligence or AI as a general term to refer to the broad range of related technologies, unless otherwise specified.

With AI's growing influence in healthcare, particularly in rural and remote settings, it is crucial that our members are equipped to use AI responsibly, ensuring that its application enhances medical education and clinical practice without compromising ethics, patient safety, or care standards. By promoting responsible

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[1] Tran, B. X., Vu, G. T., Ha, G. H., Vuong, Q. H., Ho, M. T., Vuong, T. T., ... & Ho, R. C. (2019). Global evolution of research in artificial intelligence in health and medicine: a bibliometric study. *Journal of clinical medicine*, *8*(3), 360. https://doi.org/10.3390/jcm8030360

AI adoption, we aim to ensure that the benefits of this technology are accessible to all, particularly underserved rural, remote, and Aboriginal and Torres Strait Islander communities.

The college is dedicated to building a national medical workforce with a rural generalist (RG) skill set to ensure that rural, remote and First Nations communities have access to excellent healthcare. The RG practitioner is a clinician able to meet the health care needs of their community through a broad scope of practice. This includes comprehensive primary care, public health, and advanced skills tailored to the specific needs of the community, delivered within the unique circumstances of rural and remote medical practice.

ACRRM's Fellowship training, Continuing Professional Development (CPD), and associated programs are designed to equip Fellows with the extended skills required to deliver high-quality RG care. Fellows provide a broad range of services maximising the scope of care available to communities with limited access to in-person specialists and allied health services. With RGs unique understanding of the diverse and complex health issues that rural, remote and First Nations people experience, helps to provide care that is affordable, patient centred and close to home, easing the burden on secondary and tertiary health care services.

ACRRM recognises the significant potential of AI in healthcare, and the need to implement and use it safely and responsibly. By facilitating access to high-quality care closer to home, AI technologies in healthcare hold enormous benefit in assisting to alleviate the economic and social burdens associated with traveling to larger regional centres to access timely care. Technologies such as advanced diagnostics,[2] remote monitoring and telemedicine can improve patient care by enhancing accessibility, improve patient outcomes and enable timely interventions. Additionally, AI adoption can empower rural healthcare practitioners with improved educational resources, connecting them to professional development opportunities, updated medical guidelines and peer networks that enhance their skills, support and knowledge.[3]

AI in in Rural and Remote Australia

Individuals residing in regional, rural and remote areas face significant challenges accessing healthcare services, primarily due to geographical distance and associated costs. In Australia, individuals living in remote areas often have poorer health outcomes compared to metropolitan regions and equitable access to health services remains an ongoing challenge.[4]

AI holds transformative potential to help address these problems with capabilities that can reduce clinicians' administrative workload, automate quality improvement processes, analyse large datasets, and provide enhanced services, such as telehealth to assist healthcare providers in diagnosing and treating conditions at a distance, particularly in remote areas where specialists may not be available.[5]

ACRRM is committed to supporting the development and implementation of AI technologies that enhance the capacity of rural and remote healthcare providers to provide timely and high-quality care to patients.

[2] Najjar, R. (2023). Redefining radiology: a review of artificial intelligence integration in medical imaging. *Diagnostics*, *13*(17), 2760. https://doi.org/10.3390/diagnostics13172760

[3] Paranjape, K., Schinkel, M., Panday, R. N., Car, J., & Nanayakkara, P. (2019). Introducing artificial intelligence training in medical education. *JMIR medical education*, *5*(2), e16048. https://doi.org/10.2196/16048

[4] Australian Institute of Health and Welfare. (2024). *Rural and remote health.* Retrieved from https://www.aihw.gov.au/reports/rural-remote-australians/rural-and-remote-health

[5] Bradford, N. K., Caffery, L. J., & Smith, A. C. (2016). Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. *Rural and remote health*, *16*(4), 1-23. Available at: Telehealth services in rural and remote Australia: A systematic review of models of care and factors influencing success and sustainability | Rural and Remote Health (informit.org)

The college also plays a key role in advocating for safe and ethical AI use and in training doctors on adoption techniques, as well as in the appropriate use of AI in practice. ACRRM abelieves that as AI becomes more prevalent in the workplace, it is essential that AI should support, not replace, clinical decision making.[6]

Concurrently, the college recognises the crucial role Government must play in regulating the use of AI in healthcare to ensure it is adopted in an appropriate, ethical manner. It is additionally important that effort is extended to ensure the evidence regarding AI in healthcare is strengthened by including well-defined outcome measures that can inform clinicians, health services, colleges, and policy makers of both the direct and indirect benefits that AI technologies in healthcare can achieve.

Key Areas of Focus for AI Regulation in Rural and Remote Healthcare and Medical Education

This submission addresses the three critical questions outlined in the Departments public consultation paper. ACRRM's response is informed by feedback from its members involved in a range of expert committees, including the Digital Health Committee.

1. What about AI are we trying to regulate?

To safeguard patient care and enhance medical education, the following areas need close regulation:

Data Privacy and Information Safety

The college supports the use of AI in healthcare while emphasising that the privacy of patient health data must be protected. The college advocates for robust measures, including access controls, and anonymisation techniques to mitigate risks and ensure confidentiality of sensitive information. The college believes that patients should be clearly informed about how their data will be used, the potential risks involved, and their rights to access and control their information.

Further, as AI systems increasingly handle large amounts of sensitive patient data, robust cybersecurity measures are essential to protect against data breaches and cyberattacks. In rural areas, where digital literacy and cybersecurity measures may not be as robust as in urban areas, the risk of data breaches may be even higher.

Regulation of AI systems and consideration for the relevance of data privacy laws to govern AI more broadly, must be considered to prevent breaches, protect sensitive data and ensure patient confidentiality across rural and remote communities.

Bias in AI algorithms

AI systems must be regularly assessed for biases that could exacerbate health disparities, particularly in underserved populations.[7] The recent pandemic of Coronavirus Disease 2019 (COVID-19) has proven how

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[6] Topol, E. J. (2019). High-performance medicine: the convergence of human and artificial intelligence. Nature medicine, 25(1), 44-56. https://doi.org/10.1038/s41591-018-0300-7
[7] Parikh, R. B., Teeple, S., & Navathe, A. S. (2019). Addressing bias in artificial intelligence in health care. *Jama*, *322*(24), 2377-2378. https://doi.org/10.1001/jama.2019.18058

biased AI systems amplify existing inequalities, placing vulnerable populations at a higher risk of severe illness and death.[8]

Similarly, IBM Watson for Oncology faced significant challenges with its AI software application, largely due to biases in its algorithms. Initially, the system was trained on a limited dataset of cancer cases primarily from a small number of hospitals, which did not represent the broader patient population. This led to recommendations that were not applicable to many patients, especially those from diverse backgrounds or with different medical histories. Additionally, the system sometimes favoured treatments based on the training data rather than the latest clinical guidelines, leading to unsafe or ineffective treatment suggestions.[9]

These biases highlight the importance of diverse and representative data in training AI models to ensure they can provide equitable and effective healthcare solutions.

The college recognises the critical role of real-world training data and supports fairness in AI for healthcare by moving towards practices that avoid biases and prevent misdiagnoses in certain patient groups.[10]

Development and implementation of AI systems in healthcare

The college supports the use of legislation to govern the implementation of AI across healthcare, and advocates for strategies that mitigate AI risks and harms.

Rural and remote communities are characterised by their small local clinical workforce and geographic isolation from other communities. While the introduction of AI can enhance access to services, a reduction in the local healthcare workforce due to the implementation of AI technology may negatively impact residents' access to in-person healthcare. Consideration for implementation and its associated impacts is essential to ensure that these communities do not lose access to vital in-person services.

Given the unique challenges in rural and remote communities, ongoing testing and validation in real world health settings is critical to ensure that representative populations are included in the development of AI technologies is essential for achieving equitable outcomes for the target populations being served.[11]

Further, organisations may be held liable for decisions based on clinical algorithms used in health screening, risk prediction, diagnosis, clinical decision-making, treatment planning, and allocation of resources. It is important that rigorous testing and evaluation is undertaken for accuracy and transparency to ensure patient safety.

[8] Chowkwanyun, M., & Reed Jr, A. L. (2020). Racial health disparities and Covid-19—caution and context. *New England Journal of Medicine*, *383*(3), 201-203. https://doi.org/10.1056/NEJMp2012910

[9] Faheem, H., & Dutta, S. (2023). Artificial Intelligence Failure at IBM'Watson for Oncology'. *IUP Journal of Knowledge Management*, *21*(3), 47-75. Available at Artificial Intelligence Failure at IBM 'Watson for Oncology' - ProQuest

[10] Bellamy, R. K., Dey, K., Hind, M., Hoffman, S. C., Houde, S., Kannan, K., ... & Zhang, Y. (2019). AI Fairness 360: An extensible toolkit for detecting and mitigating algorithmic bias. *IBM Journal of Research and Development*, *63*(4/5), 4-1. https://doi.org/10.1147/JRD.2019.2942287

[11] Wang, J. X., Somani, S., Chen, J. H., Murray, S., & Sarkar, U. (2021). Health equity in artificial intelligence and primary care research: protocol for a scoping review. *JMIR research protocols*, *10*(9), e27799. https://doi.org/10.2196/27799

Decision-making processes in AI systems

Emerging AI technologies face serious ethical and epistemic challenges, such as the use of black box algorithms. These cannot be surveyed or closely examined by humans and are of concern due to their opaqueness and potential lack of trustworthiness.[12]

There is a need to promote transparency and careful oversight to avoid the pitfalls of "black box" algorithms that limit accountability, reliability, and ethical integrity. AI-generated advice should be viewed as a guide rather than an authority in the process of clinical decision-making. Clinicians need to be given latitude to make decisions that are not the same as the advice provided through AI, where based on their clinically informed judgement, they have deemed these in the best interest of their patient.

There is also a need to maintain a point of ultimate accountability for patient care decisions. Patients should have the assurance that their clinicians will hold themselves personally responsible for their advice.

Integration of AI into clinical practice

AI should augment, not replace, human decision-making, ensuring that medical professionals remain central to patient care. The World Health Organisation (WHO) Guidance on *Ethics & Governance of Artificial Intelligence for Health*,[13] emphasises human autonomy as the first principle of AI in healthcare.

Integrating AI into clinical practice, it is essential that humans maintain control over health care systems. AI tools should complement, rather than replace, human medical expertise. Additionally, patients must always be informed and provide valid consent within appropriate legal frameworks for data protection.

Application of AI in medical education

The college supports AI-driven education tools that align with ethical standards and foster a balanced, human-centered approach to medical training, equipping healthcare professionals with enhanced skills and knowledge.

When considering the benefits for rural and remote patients and practitioners, it is important that ethical frameworks are cognisant of rural and remote context and circumstances. Rural and remote practitioners, including medical graduates in training, face different challenges than their urban counterparts. Therefore, they must be involved in the design, application, and evaluation of AI tools for medical education. Medical education and training tools must also consider the range of clinical settings in which the AI will be utilised/applied.

2. Who is affected by AI and its regulation?

The regulation of AI in healthcare impacts a diverse range of stakeholders. Patients, particularly those in rural and remote areas—including Aboriginal and Torres Strait Islander communities—face unique challenges related to access and the quality of care. For AI to be beneficial, it must be developed and implemented with relevant stakeholder input, ensuring data sovereignty, representation, and cultural

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[12] Durán, J. M., & Jongsma, K. R. (2021). Who is afraid of black box algorithms? On the epistemological and ethical basis of trust in medical AI. *Journal of Medical Ethics*, *47*(5), 329-335.. https://doi.org/10.1136/medethics-2020-106820
[13] World Health Organization. (2021). Ethics and governance of artificial intelligence for health. Available at: https://www.who.int/publications/i/item/9789240029200

relevance. The college believes supporting the health and safety of Aboriginal and Torres Strait Islander peoples and all patients/clients from diverse backgrounds is crucial.

Healthcare providers in these rural and remote regions may experience shifts in their practice dynamics, as AI has the potential to either bridge or exacerbate existing gaps in care.

Additionally, medical trainees and students will increasingly integrate AI into their education and professional development, necessitating the need for clear guidelines for healthcare organisations to effectively adopt and implement these new technologies.

Finally, policies must align with public health objectives, and this must be supported at all levels of government, including across policymakers and regulatory bodies. For AI developers and technology companies to develop and implement safe and responsible AI into healthcare organisations, there must be regular measures in place to ensure compliance with ethical and regulatory standards to ensure the safe deployment of the AI in health.

3. **How can we regulate AI to prevent harm and enable its benefits?**

In line with ACRRM's position statement on [AI in Healthcare](#), the college supports the following principles in relation to the safe and ethical practice of AI.

1. **Adopt a risk-based approach and assessment framework**: AI systems should undergo rigorous testing and ongoing review, with special consideration for their impact in rural and remote settings.

2. **Establish ethical guidelines for AI**: In consultation with appropriate regulators, the college strongly supports the development of guidelines for AI emphasising patient-centred care, accountability, and transparency in the use of AI systems.

3. **Ensure algorithmic transparency**: To avoid the dangers of "black box" systems and ensure that healthcare professionals understand how AI-driven decisions are made.

4. **Implement ongoing monitoring and evaluation**: AI systems should be regularly assessed for safety, effectiveness, and equitable outcomes.

5. **Enhance data governance policies**: Protecting patient privacy and ensuring responsible use of data is critical, particularly in rural areas.

6. **Promote AI education and competency standards**: We must integrate AI ethics, safety, and practical use into our medical education programs, preparing healthcare professionals to use AI responsibly.

7. **Support engagement with rural and Indigenous communities**: These communities should be involved in the co-design and implementation of AI tools to ensure cultural appropriateness and equitable impact.

8. **Maintain human oversight in AI**: AI should be a supportive tool, with healthcare professionals maintaining ultimate responsibility for patient care decisions.

Summary

AI offers tremendous potential to transform healthcare and medical education, particularly in rural and remote areas where Australia faces increasing services demands, rising costs and a shortage of skilled professionals. The college is committed to supporting the adoption of AI and its benefits in these regions in a manner that upholds ethical standards and prioritises patient safety.

ACRRM is supportive of establishing nationally agreed ethical, clinical, and technical standards for AI, developed in a transparent manner, using a co-designed and a consensus-based approach. Further, we recognise the importance of clear regulatory frameworks, that foster transparency and maintain a strong focus on ethics, while safeguarding the values that define the medical profession.

In the adoption of AI technologies, it is essential that healthcare professionals in rural and remote communities receive the support needed to adapt alongside the technology advancements and can develop skills to identify and address AI -related risks.

ACRRM welcomes the opportunity to engage in future consultations to help inform the development of AI-specific legislation. Approaches that involve diverse populations—including Aboriginal and Torres Strait Islander peoples, as well as individuals in underserved and remote communities—are essential to ensure equitable representation and access to high-quality, safe healthcare.

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ACRRM acknowledges Australian Aboriginal People and Torres Strait Islander People as the first inhabitants of the nation. We respect the Traditional Owners of lands across Australia in which our members and staff work and live and pay respect to their Elders past present and future.