

Health care in the metaverse

TO THE EDITOR: The metaverse is a virtual environment merging physical and digital realities.¹ Once the thing of movies, metaverses are tipped to be worth \$800 billion by 2024.² They have potential to revolutionise digital health care delivery, access, education, and patient outcomes.³ Artificial intelligence (AI)-enabled health care, with metaverse enhancement, could create virtual hospitals,⁴ transform clinical workflows and accelerate the diagnosis and treatment of conditions relating to mental health,⁵ cardiology,^{6,7} ophthalmology,⁸ and oral health,⁹ for example.

AI-enabled technology demonstrated potential during the pandemic by predicting the incidence of coronavirus disease 2019 (COVID-19)¹⁰ and helping to identify sites for vaccine trials.¹¹ Yet in the absence of strong national and global health governance and accountability mechanisms, digital health ecosystems create risk for medical confidentiality and privacy breaches¹² resulting in data sharing¹³ and use/reuse by corporations or governments outside its intended purpose and the bounds of patient consent.¹⁴ For example, a National Health Service (NHS) Foundation Trust in the United Kingdom established patient data sharing with the international technology company DeepMind to develop machine learning-based management tools,¹⁵ but British patient data moved to the United States when Google acquired DeepMind.¹⁴ Repurposing health-related biometric and genomic data that cannot be altered is similarly concerning, and can result in racial profiling¹⁶ and privacy violations in the absence of appropriate legislation.

Metaverses also have potential to accelerate discriminatory practices. Bias may be embedded in data used to train AI models through lack of community representation or participation.¹⁷ Structural inequalities may be reflected in health care datasets, creating risk for discriminatory outcomes.¹⁸ For instance, racial bias in a health care therapy algorithm resulted in the discriminatory underestimation of health risk for millions of American citizens, precluding access to vital treatments.¹⁹

Prioritising protections for underserved populations and their right to access safe virtual health care is crucial,²⁰ especially for Australians at the intersection of inequities driven by poverty, disability, gender, homelessness, Indigeneity, and for the 11% highly excluded from accessing digital technologies.²¹ We recommend that the Department of Health and the Australian Digital Health Agency partner with the Australian eSafety Commissioner's work examining metaverse deployment,² to ensure the highest ethical standards are upheld as planning moves forward and regulatory frameworks are developed.

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