

EDITORIAL

## Digital technologies in health: Implications for health professional education

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The integration of digital technologies into healthcare has been steadily accelerating, attaining a rapid pace in recent years with advances in digital health, health informatics, genomics, artificial intelligence (AI) and robotics. Digital technologies offer healthcare exciting possibilities, including improvements in efficiencies in health practice, equity of access and patient participation in healthcare, and communication with patients via telehealth. Genomics has the potential to enable personalised treatment strategies, identify genetic predispositions to diseases and inform the development of novel therapeutics, thereby significantly enhancing patient outcomes and revolutionising the approach to preventive care and diagnostics. Through efficiencies and enhancements to healthcare, health professionals will be able to devote more time to patient care according to the Topol review into the implications of digital technologies for Britain's National Health Service (Topol, 2019).

Digital technologies can, however, potentially harm healthcare. Technology-enabled diagnoses and treatments may be inaccurate. Patients may experience inequitable access to telehealth through lack of or poor-quality technology, technical skills and internet connection; indeed, even young people, who are often considered digital natives, may be affected by digital inequity (Fuller et al., 2022). Additionally, although consumers' access to health information has increased through the proliferation of health information online and on social media, the existence of misinformation and poor-quality resources means that many consumers have insufficient digital health literacy to access, understand, critically appraise and apply information from electronic sources to solve a health problem or question (Norman & Skinner, 2009). Patient confidentiality is also at risk through potential breaches in the security of digital patient data storage systems and health professionals' communication about patients (Topol, 2019).

What does this mean for health professional education (HPE)? Health professional students at all levels—undergraduate, postgraduate, vocational and continuing professional development (CPD)—will need to increase their knowledge and skills so they can use a range of emerging digital health systems, and analyse the data emanating from them, and critically appraise digital health technologies and information for trustworthiness and relevance. Additionally, students will need to appreciate the ethics related to patient data confidentiality and security in both digital health systems and communication channels. In this issue, Townsley, Sumner, O'Neill, Kenwright, Wilkinson and Grainger outline their work in mapping health informatics teaching throughout their curriculum. They also report on final-year medical students and recent

graduates' perceptions of health informatics and its place in the medical curriculum. Terrill, Pearce, Chau and Young discuss the need for general practitioners to understand genomics and genomic testing and report on their evaluation of an online CPD course that aims to meet this need.

Perhaps the greatest challenge for HPE stems from AI, an undeniably disruptive technology pervading the educational landscape. Its integration into student work is inevitable, given its potential to significantly enhance learning outcomes and prepare students for their future professional roles (Shankar, 2022). Thus, it is imperative that HPE curricula evolve to include comprehensive teaching on the ethical and appropriate use of AI (Masters, 2023) and the critical appraisal of information created with it. This would not only ensure that students are adept at leveraging AI in their future careers but also emphasise the importance of critical thinking and maintaining integrity and professional standards in their work. The proliferation of AI introduces significant challenges in the design and implementation of assessment tasks within HPE. Traditional assessment methodologies are increasingly at risk of obsolescence, necessitating a paradigm shift towards more authentic assessments. These may encompass continuous in-person assessment of practical or clinical skills, oral examinations and invigilated written exams that are impervious to the influence of generative AI tools. The reliance on written tasks, which are susceptible to completion by AI without genuine student engagement or learning, underscores the urgency for educators to redesign assessments (Abd-Alrazaq et al., 2023). This critical juncture in educational technology calls for a balanced approach that harnesses AI's potential while mitigating its threats through innovative assessment strategies and rigorous ethical training.

Tertiary education providers and health professional programs can help to ensure that the integration of digital technologies into healthcare is effective through broadening the knowledge and skills of students, the future health workforce. Multidisciplinary collaboration with fields outside health, such as engineering, computer science, bioethics and philosophy, could be encouraged (Topol, 2019). Graduate and postgraduate courses could promote admission of students from diverse undergraduate programs, ensuring that support is available as students enhance their basic clinical sciences. Programs can also enable the intercalation of honours, master's and PhD programs in diverse fields or promote other avenues for individualisation, such as electives and research projects (Barrett et al., 2022).

### ***In this issue***

In their 50th anniversary series paper, Brewer, Evans, Gum, Kent and Anakin trace the development of interprofessional education (IPE) in Australia and New Zealand, its current status and suggestions for the future. Van Diggele, Roberts, Bloomfield and Lane explored faculty perceptions of a new IPE curriculum model using the conceptual lens of social capital theory.

The effects of video-based practical skills resources on osteopathy student engagement was explored by Tripodi, Murray, White, Korac, Husaric and Tangelakis, who also found differences between student engagement with resources during block- and traditional-model delivery. Medical students' perceptions of involvement in a 6-week research project was explored by Ward, Diug and Wallace, who found a difference between students with and without prior research experience, and in their response to Zadow et al. (2023), Gild, Wong, Staples and Schnitzler encourage the teaching of planetary health in HPE and outline a range of potential curricular approaches.

Kugler, Brusco, Slade, Boyd and Taylor report on research into nurses' experience implementing the skills they learnt from a training program that teaches manual handling through risk assessment. Research into an introductory quality improvement workshop for physician trainees is outlined by Aung, Ryall, Davis, Shukla, Knight and Lee.

Finally, Beckingsale, Olson, Robertson-Smith, Ronayne and Anakin provide strategic advice on writing conference abstracts in HPE research.

*A/Prof Karen Scott*

*Editor, FoHPE*

*The University of Sydney*

*Dr. Joanne Hart*

*The University of Sydney*

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