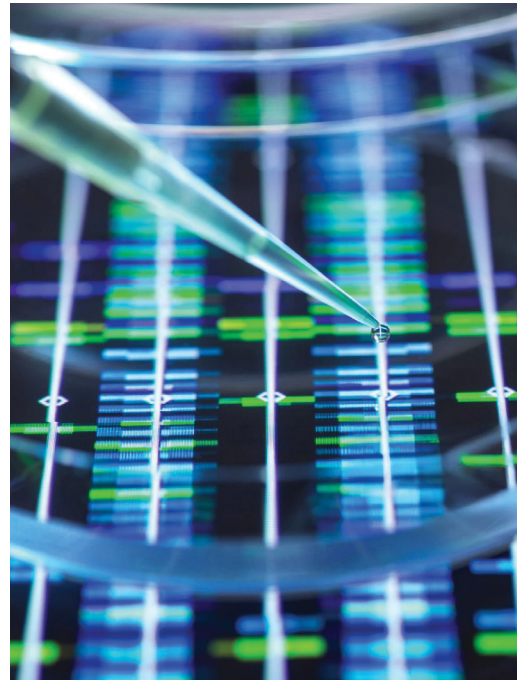


Horizon scan 2035:

Digital health and the future of general practice



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Background

Digital health has become core clinical infrastructure in Australian general practice. Artificial intelligence (AI), genomics and simulation technologies are converging with workforce, demographic and equity pressures to reshape care delivery.

Objectives

To describe key digital technologies likely to shape general practice to 2035. To identify system shifts needed for safe and equitable integration. To outline 'no regrets' actions.

Discussion

General practice is moving from episodic to continuous data-enabled care supported by AI, genomics, digital twins and wellness technologies. These tools promise more personalised and preventive care but risk widening inequity and creating new governance, accountability and cyber-security challenges. Investment in digital and genomic literacy, interoperable infrastructure, ethical governance and equity-by-design is essential to maintain trust and professional standards.

DIGITAL HEALTH has shifted from being a background conversation in general practice to being the central force of what the future might bring. From My Health Record (MHR),¹ electronic prescriptions (e-Scripts),² and Real Time Prescription Monitoring (RTPM),^{3,4} to e-referrals and virtual consultations,^{5,6} technology has shifted from being an adjunct to becoming core clinical infrastructure. Artificial intelligence (AI) scribes, clinical decision support tools and agentic AI are already moving from pilot projects into daily practice.^{7,8}

The future of general practice is being reshaped before our eyes. Yet the real question for general practice is no longer what technologies exist, but rather what kind of consulting room, and what kind of profession, we want to build for 2035 and beyond. Will technology simply layer efficiency onto today's models of care, or will it fundamentally redefine how general practitioners (GPs) engage with patients and the increasing swathes of health information? And how will GPs balance their decision-making with the advancements of AI? This horizon scan explores the convergence of emerging technologies such as genomics, precision medicine, digital twins and AI, alongside systemic forces of workforce pressures, demographic shifts, climate change and the equity divide, that will shape their adoption. The future of general

practice will rest not on technology itself, but on how GPs govern, adapt and humanise innovation to sustain trust and deliver equitable and personalised care.

What is coming?

Against this backdrop, several fast-maturing technologies are poised to redefine the consulting room over the next decade.

1. AI at scale

Generative AI will move beyond just transcribing consult notes to support history-taking, adherence to guidelines, diagnostic reasoning, management decisions and patient education. These capabilities already exist, and their safe integration will depend on effectively navigating the regulatory, clinical governance and medico-legal aspects of this technology and how it assists with these tasks.

2. Genomics and precision medicine

Point-of-care genomic testing and polygenic risk scoring will become routine. This will shift prescribing and preventive care and allow GPs to provide enhanced personalised care to their patients.^{9,10} Pharmacogenomics has the potential to help GPs and patients understand how individuals respond to certain medications and can help reduce adverse medication related events, thus improving

patient outcomes.¹¹ Additionally, population screening programs will increasingly incorporate genetic risk factors informed by genomic testing.^{10,12}

3. Longevity and wellness technologies

Since the COVID-19 pandemic there has been a rise in consumer demand for 'healthspan' as well as increased engagement and knowledge around an individual's own healthcare. These factors will drive interest in metabolic monitoring, regenerative therapies and preservation of cognition.¹³ Patients will increasingly seek healthcare for proactive 'optimisation', not just treatment for illness, as in our current sick care model.¹⁴

4. Digital twins and simulation

Patient specific replicas combining genomic, physiologic and lifestyle data will allow simulation of disease progression or treatment before they occur. This will change the way we rely on traditional clinical trials. Furthermore, digital twins will also be crucial for population health initiatives, allowing government and public health bodies to shape health policies that better serve everyone.

System level shifts

While these technologies promise to transform the consultation itself, their true impact will depend on how general practice adapts at a system level. Australian general practice currently faces challenges from many different perspectives, including changing demographic and workforce needs, increasing demand, as well as climate change and environmental factors. Technology has the potential to solve some of these issues through driving efficiency and scalability with our limited resources. In 2035, general practice will be defined by continuous care rather than episodic care. Many of a GP's patients will arrive with dashboards of self-collected data (with key insights), predictive risk scores and algorithm generated recommendations. The GP will remain the trusted interpreter and navigator helping patients weigh up uncertain evidence, values and choice. GP roles will focus much more on preventive care as we have access to modifiable risks and data to inform personalised care management plans. To maintain trust,

there will need to be transparency around how emerging technologies like generative AI work, how data is stored, shared and used, and the benefits and risks.

At the same time, we need to consider equity and trust. Without careful design, these advances risk widening the health equity divide, privileging the affluent, health literate and digital literate patients while leaving the most vulnerable behind. The history of digital health already shows that those who need it most are often the least able to access it. This might be due to factors such as location (remote patients without internet connectivity), poorer patients who cannot afford wearables or mobile phones with data, or those who have language or cultural barriers.¹⁵

The workforce will also evolve. The rise of AI-assisted consultations may redistribute tasks between GPs, nurses, allied health and digital assistants. Medico-legal frameworks will need to adapt to shared accountability between clinicians and the technology. GP leadership will be required to guide a team-based approach to safe AI use, ensuring that nurses, allied health professionals and administrative staff are also supported to understand the uses, limitations and governance of emerging technologies. Alongside opportunity, new risks will emerge. Practices will need to strengthen cyber-security capability, clarify professional accountability when AI is used in clinical decision making, and maintain business-continuity capacity to function safely during digital outages. There is also a risk of professional and relational disconnection if digital tools replace reflective peer discussion or weaken clinician-patient relationships. Proactive governance and team-based workflows will be essential to ensure that innovation enhances rather than erodes continuity, collegiality and trust.

'No regrets' actions for general practice today

While the exact outlook for 2035 cannot be predicted, several actions represent 'no regrets' investments for general practice.

1. Build digital and genomic literacy:

Training and continuing professional development (CPD) must equip GPs with confidence and trust in AI, genomics,

data governance and sovereignty.

These skills will become as critical as clinical skills.

- 2. Strengthen interoperability and stewardship:** Today's core digital health infrastructure and clinical information systems must all evolve to handle genomic information, wearable and AI-generated data. Investment of interoperable infrastructure is foundational to robust digital health systems.
- 3. Embed ethical transparency and governance:** Practices should adopt frameworks for responsible AI and data use now and publish these for patients to review. This is essential to maintain patient trust and GP accountability.
- 4. Champion equity by design:** Digital health must be designed with all communities in mind. The foundation of good digital health design always considers the patients' needs. Culturally and socioeconomically diverse communities must be considered and be part of the design process. GPs should advocate for inclusion and equity as well as offering non-digital options, so no patient is left behind.
- 5. Cultivate adaptability:** The most future ready practices will not be those who adopt every tool, but those that can critically appraise, adapt and integrate innovation safely and sustainably while maintaining trust and transparency. The importance of bringing the whole practice along on this journey, to cultivate adaptability in administrative staff and practice nurses, cannot be understated.

Looking beyond 2035

By 2035, it is possible that AI and genomics will feel as routine as prescribing antibiotics or interpreting an electrocardiogram (ECG). Yet technology will not define the future of general practice. What will define it, is how we leverage this technology to deliver better models of care for patients and move to a more preventive and personalised therapeutic relationship. There are examples of technology today that already fragment care and exacerbate divides.¹⁶⁻¹⁸ GPs need to use future digital health tools mindfully, in a way that deepens trust, enhances equity and delivers better outcomes to their patients.

Conclusion

GPs do not need to forecast with certainty what the future might look like, but preparing intentionally will make the foundations of good practice. If general practice embraces this mindset now, the GP consulting room of the future can be one where advanced technology and human connection work collaboratively and seamlessly to provide more personalised, equitable and effective care.

Key points

- Digital health is now core infrastructure.
- AI, genomics and digital twins will accelerate preventive care.
- Poor design of digital health tools risks widening inequity.
- Governance, cyber-security and accountability are central competencies of digital health.
- Investment in literacy, interoperability and equity-by-design is 'no regrets' preparation for the future of digital health.

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