# An overview of digital readiness in dentistry – are we ready?

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## Key points

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| Introduces the concept of digital readiness. | Describes the benefits of digital technology in dentistry. | Highlights how dental teams become digitally ready. |

## Abstract

Digital technology is transforming how dentistry will be delivered in the future. Adopting digital opportunities will enable staff and patients to confidently navigate this new digital environment. We need to consider how dentistry is identifying and developing digital talent, building digital competence and future-proofing our teams. It also implies there must be a fundamental culture change in the way the profession collaborates with patients, clinicians, service commissioners and policymakers to deliver a sustainable digital transformation.

## Background

Digital technology is progressively transforming the way we work and interact with our environment.[1] It has the power to improve health, care and wellbeing, by increasing service users control over their health. The COVID-19 pandemic saw an accelerated shift towards online working and evident willingness to adopt new ways of working clinically. A key example was the uptake of telemedicine, an important tool in continuing patient services while minimising virus transmission.[2]

There is a clear drive from the UK government in healthcare policy towards digital transformation, influenced by pandemic recovery and ensuring long-term health and social care sustainability. New collaborations between policymakers, industry, clinicians and wider local healthcare systems are leading advances in digitally enabled care pathways that were not considered feasible before the pandemic.

However, regional variations are slowing healthcare digitisation, with data from the Office for National Statistics highlighting the persistent digital divides that still exist at patient, clinician and organisational levels. Digital exclusion persists across the North of England and Northern Ireland, where 12–15% of the population are classified as 'internet non-users', although regional gaps have started to narrow over the last decade. This suggests that groups most likely to need healthcare are also least likely to have digital skills, compounding healthcare inequalities. Older generations, the less affluent, or those with poorer self-reported health are less likely to engage in digital technologies for health purposes.[3] Lack of digital skills, accessibility and connectivity issues undermine digital inclusion.

COVID-19 accelerated adoption of digital technologies by at least a decade.[4] Significant uptake of the NHS app and other information sharing portals show patients are no longer passive recipients of care. Increasingly, patients carry their personal healthcare records, deciding with who to share it and for what purpose. In return, patients expect transparency, access to reliable services and are willing to embrace technologies allowing them to understand their care. This expectation extends to their healthcare providers, who need to effectively utilise digital technology to support their patients' needs.

The digital divide will continue to be a persistent challenge unless actively addressed. Improving digital health literacy for patients and health professionals is an avenue to address this, by improving equity of access and ultimately reducing inequalities.[5] The recently released 'Levelling up' policy white paper[6] lays out the government's intent to progress a suite of digital delivery programmes, including improved data access, to address existing health inequalities that will require everyone to become more digitally literate and engaged.

## Digital readiness

Digital readiness is the motivation and competence to effectively adopt, use and spread digital healthcare technologies. It is a multifactorial concept, not simply an investment in information technology equipment or infrastructure. Sustainable technological transformation requires changes in culture, process and technology. Organisations must adapt working practices in response to an ever-changing environment. This is especially relevant in primary and community settings where use of patient-facing technology was accelerated during the pandemic.[7]

Despite being a craft speciality that requires delivery of face-to-face care, dentistry is not immune to these changes. However, working

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within a complex human-centred system means ongoing progress will need evolution and adaptation, not revolution and disruption. There are clear applications relating to oral health promotion, education and training[8] and for dental diagnostics and techniques. The potential to go further in preventative and personalised care was the vision set out in the *Topol review*.[9] Application of genomics, biosensors, electronic records, smartphone applications and data-driven technologies means healthcare can be delivered on an increasingly rational, efficient and personalised basis.[10] However it is appreciated that integrating the unique delivery model of dental care with technology will require a gradual, phased approach, rather than rapid implementation.

One challenge in creating a resilient, digitally ready dental workforce is ensuring consistency in terminology. Interchangeable use of the terms digitisation, digitalisation, or digital transformation may cause confusion.[11] Digitisation is the process of converting information from a physical format into a computer system-based program, while digitalisation uses that digital technology to streamline workload, introducing efficiencies and improve productivity. Consequently, digital transformation (or more correctly, digitally enabled transformation) improves efficiency and reduces human error, leading to better patient outcomes and lower costs.

Digital readiness is dependent on understanding data, which is key to ensuring accessible and equitable health care. Emerging research is transforming diagnostics and therapeutics, opening the possibilities of offering personalised, preventive care. Use and interpretation of data will be a key driver for adopting artificial intelligence and robotics in the future but needs to be implemented as part of digital readiness programmes.[12]

It remains to be determined what motivational drivers and upskilling the dental workforce requires, which was highlighted in the General Dental Council's commissioned review of dentistry during the COVID-19 pandemic.[13] Investing in and engaging the multi-disciplinary dental team to signpost and support patients in accessing evidence-based digital healthcare requires a stepwise

change. Currently, NHS care is based around disease management and care settings, rather than the health and care journey of patients. A greater focus on preventive health strategies will personalise care, based on the needs and experience of patients and allow technology to be the enabler for transformation. This will incur significant development costs and require a national commitment from commissioners. Without a unified approach, there is a real risk of further widening the inequity of access that already exists.

There will be a need for further investment in education and training of the dental profession. The 2021 *Advancing dental care review* outlined how evidence-based technology can improve the delivery of postgraduate training, particularly through the development of digital literacy within the wider dental workforce.[14] Practitioners can identify their digital readiness using one of several emerging self-assessment tools, which signpost areas for personal development. By increasing motivation and confidence to effectively adopt and spread digital healthcare technologies, it will be possible to minimise the digital gap and deliver the key digitalisation milestones set out in the NHS Long Term Plan.

To sustain the rapid advancements achieved during the pandemic requires addressing the continuing underlying challenges that face digitalisation, particularly inadequate infrastructure and lack of investment. Equally, the significant patient waiting time backlog created by reduced services cannot be ignored and it is essential to prioritise service recovery. This should be viewed as an ideal opportunity to evaluate how technology can support patient care in the post-pandemic world, counterbalanced against face-to-face patient contact where required.

## Conclusion

In summary, technology is not a tool to be adopted but a culture to be grown. The aspiration is to ensure that dental teams are supported to become digitally-literate, acknowledging that cultural shifts will take time. Digital readiness is a positive opportunity for professional development,

allowing the dental workforce to benefit by redefining roles, expanding career pathways and enhancing professional networking that will inevitably drive patient safety. Digital readiness is the first stage of this technological evolution and dentistry is in an ideal position to lead this integration with our patients and stakeholders.

*Author contributions*
*Andrew Dickenson, Jessie Tebbutt and Hatim Abdulhussein equally contributed to the writing and content of this paper.*

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