EDITORIAL

The Future of the Health Professions: Navigating Shortages, Imbalances, and Automation

Martin McKee¹ 🕞 | Tiago Correia^{2,3} 🕞

¹Department of Health Services Research and Policy, London School of Hygiene & Tropical Medicine, London, UK | ²Associate Laboratory in Translation and Innovation Towards Global Health, LA-REAL, Global Health and TropicalMedicine, GHTM, Instituto de Higiene e Medicina Tropical, IHMT, Universidade Nova de Lisboa, UNL, Lisbon, Portugal | ³WHO Collaborating Center for Health Workforce Policies and Planning, Instituto de Higiene e Medicina Tropical, IHMT, Universidade Nova de Lisboa, UNL, Lisbon, Portugal

Correspondence: Martin McKee (martin.mckee@lshtm.ac.uk)

Received: 17 October 2024 | Accepted: 18 October 2024

Funding: The authors received no specific funding for this work.

Keywords: artificial intelligence | future of health care | managerialism | professions

ABSTRACT

The healthcare sector is undergoing significant transformation driven by workforce shortages, role imbalances, and technological advances. Traditional health professions, characterised by advanced knowledge and self-regulation, face challenges from two key trends. First, there is a growing reliance on less-trained workers, such as nursing assistants and physician associates, to fill gaps, raising concerns about patient safety and the quality of care. While these roles can assist in simpler tasks, their expanded responsibilities—often exceeding their training—can lead to adverse outcomes, particularly in critical medical scenarios. Second, the rise of automation and artificial intelligence (AI) offers both opportunities and risks. While AI shows promise in reducing administrative burdens and aiding specialized tasks like image recognition, its limitations hinder its broader adoption, such as reinforcing biases and failing to reason diagnostically. This editorial argues that uncritical reliance on these developments risks compromising healthcare quality. It calls for evidence-based policymaking, robust oversight, and updated regulatory frameworks to ensure patient safety while adapting to these shifts. Getting the right balance between maintaining professional autonomy and integrating new roles and technologies is critical for building resilient healthcare systems capable of responding to future challenges.

A recent paper in the British Medical Journal was entitled "Medicine is difficult—there are no shortcuts" [1]. The author was drawing attention to a fundamental contradiction. On the one hand, there are changes in both the science and art of medicine, with remarkable advances in the former driven by progress in our understanding of the molecular mechanisms that underpin health and disease and the latter reflecting popular expectations that place the patient at the centre of clinical encounters that, increasingly, involve multidisciplinary teams. On the other hand, faced with chronic shortages of health workers in some countries, including the United Kingdom, from where the author was writing, there is pressure to reduce the length of medical training [2].

At its heart, this debate has the question of what a profession is. Traditionally, professions have been defined as groups of individuals who undertake specialised work that necessitates advanced knowledge, formal academic qualifications such as university degrees or specialised certifications, and specific training [3]. Characterised by a high degree of expertise, the

© 2024 John Wiley & Sons Ltd.

Summary

- Health professions face shortages, imbalances, and techdriven transformations.
- AI and automation offer help yet pose risks in healthcare, requiring careful regulation.
- Increased reliance on less-trained workers risks patient safety and care quality.
- The value of professions should not be underestimated or undermined.

classic examples are law and medicine, with roots in several ancient civilisations, while others, such as architecture and engineering, joined their ranks in the 17th and 19th centuries, respectively. More recently, they have been joined by nursing, although to varying extents in different countries [4], and a range of specialist therapists. Professionals are expected to possess deep expertise acquired over years of study and experience, distinguishing them from non-professionals and skilled workers. This extensive training equips them with the knowledge and ability needed to make informed decisions and carry out their responsibilities. Because this knowledge is so specialised, most countries have created structures that provide a high degree of self-regulation, albeit within a framework determined by the state. This enables the professions themselves to determine their own scopes of practice, where necessary working with governments to amend legislation, such as that permitting nurse prescribing. These arrangements are, in effect, a pragmatic agreement that the profession will act in the public interest, adhering to agreed ethical and competency-based standards and enforce penalties against any violations in return for a degree of autonomy.

This concept of a self-regulating profession that is the repository of advanced knowledge and skills is being challenged in two ways. The first is the creation of new groups of workers with less training to take on some of the roles of established health professionals. Examples include nursing assistants and what are misleadingly termed "physician associates", a title that was changed from the original and clearer "physician assistants".

There is little argument that others can undertake many of the tasks undertaken by established health professionals in occupations with less training [5]. Examples include administrative work and simple clinical tasks, such as inserting infusions. However, in some cases, such as the physician associates in the United Kingdom, their role is expanding far beyond that. In many hospitals and primary care facilities, they are being used as substitutes for doctors, undertaking work that, controversially, includes surgery, management of undifferentiated patients in primary care, and even child protection work in criminal cases, despite having only 2 years of formal training in the (undefined) "medical model" [6]. Although they cannot lawfully prescribe medicines, this prohibition has frequently been flouted. Crucially, they do not meet the definitions of professionals in that their roles must be defined by doctors who

take ultimate responsibility for their actions and thus must be comfortable with what they are doing. However, how this is translated into practice has, so far, been far from clear.

A second challenge is arising from advances in automation. Nowadays, many interactions with service providers such as banks or airlines involve chatbots or machines using voice recognition. Readers with experience of them will have their own views about how well they work. Inevitably, given the cost savings for service providers, or more accurately cost transfers, from the providers to their clients whose time and frustration is never costed, there are suggestions that their use on health care might be expanded [7]. This exploits apparent opportunities created by artificial intelligence (AI).

Especially where there are shortages of health professionals, both of these developments are superficially attractive. Yet despite the enthusiasm in some circles, evidence to support them is largely absent. We can look to a previous example where medical training was shortened, and a new cadre of workers was recruited. In the 1920s, the Soviet Union confronted a workforce crisis as the new regime sought to expand the health system rapidly. Like the United Kingdom today, it shortened the medical curriculum and expanded the use of medical assistants, known as feldshers [8]. While this worked to some extent at the time when there were very few modern treatments available (a situation that continued much later than in Western countries because of the inability of the Soviet Union to establish a modern pharmaceutical industry), it was unable to respond to the epidemiological transition and accompanying increase of treatable chronic diseases.

But surely, faced with such shortages, anything that increases the number of staff must be a good idea. Unfortunately, the experience with nursing assistants, a group that has been studied extensively, reaches the opposite conclusion. Adding them to teams of professional nurses has consistently been associated with worse outcomes, perhaps because the trained nurses delegate responsibility for monitoring patients inappropriately, thereby missing the early signs of patients deteriorating [9]. Although the evidence on physician associates is less extensive, what exists, coupled with widespread concerns among health professionals [10, 11], has led professional bodies in the United Kingdom to reverse their initial support for these roles [12].

The evidence must similarly temper the enthusiasm for automating the work of health professionals. AI applications clearly have a place, whether in reducing administrative burdens or in areas such as image recognition, such as radiology or histopathology. However, once again, the claims made have often failed to meet expectations [13]. Applications trained on data from one population may not work on another, and they may reinforce existing biases, such as racial differences in treatment. They can even mislead when they falsely confirm an incorrect diagnosis [14]. Meanwhile, the quest for what is termed Artificial General Intelligence, which can reason (an essential element of diagnosis) rather than simply analyse existing data in novel ways, remains elusive [15]. Yet, while the empirical evidence does not support the suggested alternatives to the health professions, powerful forces are pushing this agenda. A free-market strand of thought sees any restrictions by the state as interference in the freedom of the individual to choose [16]. Often promoted by think tanks whose funding is obscure, this strand argues that there is no need for medical licencing, as the individual should be able to choose anyone who purports to be able to diagnose and treat them [17]. While the advocates of these extreme ideas are often unwilling to publicise them, instead placing them in pamphlets or working papers for their supporters, they are willing to promote less radical alternatives, such as those discussed above. They are aided by several developments. One is the increasingly easy access to unfiltered medical information of varying accuracy online [18]. Another is the rise of managerialism [19]. Finally, there is an increasing questioning of professional autonomy, which at times takes the form of suspicion [20, 21]. This has created a culture of accountability that, while proposed as a means of restoring trust, may take the form of "rituals of verification" that undermine it [22].

These developments have important implications for policy and management. While creating new roles is attractive to those faced with health worker shortages, this comes with significant concerns about patient safety, quality of care, and the long-term effects of relying on less-trained individuals for complex medical tasks. Policymakers must ensure rigorous oversight and clear scope definitions for these roles, with mechanisms to ensure accountability and competency.

Automation and AI do hold promise, particularly in reducing administrative burdens and aiding tasks like image recognition in radiology. However, as we note earlier, they are far from perfect [13]. Policymakers must ensure robust regulation to mitigate these risks and ensure AI tools are appropriately integrated into healthcare systems without compromising care quality. The approach being taken by the European Union is likely to become a global benchmark in time [23].

The health sector exemplifies how self-regulation upholds high standards of service quality. Advocating for professional selfregulation does not avoid the need for statutory mechanisms to ensure transparency, inclusiveness, safety, accountability and appropriate responses to malpractice. Nor does it imply support for exclusionary corporatism or siloed practices that resist necessary change [24]. We live at a time when self-regulation is often misinterpreted in these ways, overlooking the substantial gains it has facilitated in the past.

Uncritical views on the introduction of less-trained workers and automation exemplify this argument. Thus, it is crucial to use empirical evidence when reshaping professional roles and integrating technology into healthcare. Things that seem a good idea on paper may not be in practice. Short-term solutions can have adverse long-term consequences. It will not be easy to devise appropriate regulations for new professional roles and the growing use of AI. As these roles expand, governments and professional bodies must work together to ensure that training, competency, and ethical standards are not diluted. This may require updated regulatory frameworks that adapt to new roles and technologies while maintaining the integrity of health services. In sum, we see this integration as a pathway to developing adaptive and resilient organisational structures that are often too rigid and lack capacity to respond swiftly to emerging needs, including public health crises [24, 25].

Acknowledgements

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The authors have nothing to report.

References

1. A. Elder, "Medicine Is Difficult-There Are No Shortcuts," *BMJ* 387 (2024): q2163, https://doi.org/10.1136/bmj.q2163.

2. D. Oliver and L. Vaughan, "The GMC's Future Vision for Medical Training Must Be Challenged," *BMJ* 384 (2024): q728, https://doi.org/10. 1136/bmj.q728.

3. E. Freidson, *Profession of Medicine: A Study of the Sociology of Applied Knowledge* (University of Chicago Press, 1988).

4. Yt Hoeve, G. Jansen, and P. Roodbol, "The Nursing Profession: Public Image, Self-Concept and Professional Identity. A Discussion Paper," *Journal of Advanced Nursing* 70, no. 2 (2014): 295–309, https://doi.org/10.1111/jan.12177.

5. M. C. van Schalkwyk, A. Bourek, D. S. Kringos, et al., "The Best Person (Or Machine) for the Job: Rethinking Task Shifting in Healthcare," *Health Policy* 124, no. 12 (2020): 1379–1386, https://doi.org/10. 1016/j.healthpol.2020.08.008.

6. H. Salisbury, *Helen Salisbury: Training in the Medical Model* (British Medical Journal Publishing Group, 2023).

7. M. Jovanović, M. Baez, and F. Casati, "Chatbots as Conversational Healthcare Services," *IEEE Internet Computing* 25, no. 3 (2020): 44–51, https://doi.org/10.1109/mic.2020.3037151.

8. M. McKee, "The Sovietisation of British Medicine," *Journal of the Royal Society of Medicine* 117, no. 6 (2024): 192–196, https://doi.org/10. 1177/01410768241257986.

9. R. Greenley and M. McKee, "How Will Expansion of Physician Associates Affect Patient Safety?," *BMJ* 386 (2024): q1377, https://doi.org/10.1136/bmj.q1377.

10. P. Kar, "Physician Associates: A Pause in Rollout Is Needed," *BMJ* 384 (2024): q634, https://doi.org/10.1136/bmj.q634.

11. D. Oliver, "Senior Medical Leaders Have Mishandled Doctors' Concerns Over Physician and Anaesthesia Associates," *BMJ* 384 (2024): q665, https://doi.org/10.1136/bmj.q665.

12. M. McKee and C. Bolton, "'A Whirlwind of Anecdotes'? The Academy of Medical Royal Colleges Seems Unconvinced by Evidence of Concerns About Physician Associates," *BMJ* 387 (2024): q2154, https://doi.org/10.1136/bmj.q2154.

13. M. McKee and O. J. Wouters, "The Challenges of Regulating Artificial Intelligence in Healthcare Comment on 'Clinical Decision Support'z and New Regulatory Frameworks for Medical Devices: Are We Ready for it?—A Viewpoint Paper'," *International Journal of Health Policy and Management* 12 (2023): 7261.

14. R. Rosenbacke, Å Melhus, M. McKee, and D. Stuckler, "AI and XAI Second Opinion: The Danger of False Confirmation in Human-AI

Collaboration," Journal of Medical Ethics (2024): 110074, https://doi. org/10.1136/jme-2024-110074.

15. S. J. Russell and P. Norvig, Artificial Intelligence: A Modern Approach (Pearson, 2016).

16. J. R. Shackleton, Conspiracy Against the Public? (2017), https://iea.org. uk/wp-content/uploads/2017/12/Conspiracy-Against-the-Public-F1.pdf.

17. D. A. Hyman and R. A. Epstein, Controlling the Cost of Medical Care: A Dose of Deregulation (2008), https://chicagounbound.uchicago. edu/cgi/viewcontent.cgi?article=1126&context=law_and_economics.

18. M. S. Larson, "Professions Today: Self-Criticism and Reflections for the Future," *Sociologia - Problemas e Praticas*, no. 88 (2018): 27–42.

19. J. Evetts, "Professions in Turbulent Times: Changes, Challenges and Opportunities," *Sociologia - Problemas e Praticas*, no. 88 (2018): 43–59.

20. T. Carvalho, T. Correia, and H. Serra, "Guest Editorial. Professions Under Suspicion: What Role for Professional Ethics and Commitment in Contemporary Societies?," *Sociologia—Problemas e Praticas*, no. 88 (2018): 9–25.

21. J. Evetts, Introduction: Trust and Professionalism: Challenges and Occupational Changes (Sage, 2006), 515–531.

22. M. Power, The Audit Society: Rituals of Verification (OUP, 1997).

23. European Commission, European Artificial Intelligence Act Comes into Force (2024), https://ec.europa.eu/commission/presscorner/detail/en/ip_24_4123.

24. T. Correia, E. Kuhlmann, G. Lotta, et al., "Turning the Global Health and Care Workforce Crisis Into Action: The Pathway to Effective Evidence-Based Policy and Implementation," *International Journal of Health Planning and Management* (2024), https://doi.org/10.1002/hpm. 3860.

25. T. Correia, W. Ricciardi, and M. McKee, "Preparing for the 'Next Pandemic': Why We Need to Escape From Our Silos," *International Journal of Health Planning and Management* 39, no. 4 (2024): 973–979, https://doi.org/10.1002/hpm.3757.

