

Digitalisation, Artificial Intelligence (AI) and the NHS workforce

The KONP Data Working Group

Introduction

For some years, NHS England has argued that digitalisation and AI can solve many of the problems of the NHS. The Long Term Plan (2019), for example, suggested that the use of digital tools to support clinicians' decision-making would give consultants more time for training, or the use of wearable monitoring devices would allow more patients to be cared for at home and thus not take up expensive (and dwindling) hospital beds. In general practice alone, AI is already introducing voice recognition for transcribing patient consultations, while Integrated Care Systems (ICSs) are using AI to facilitate a shift towards personalised, data-driven disease prevention and treatment.

At the same time, there is scepticism about the extent to which AI can resolve the NHS's problems. For example, AI has yet to have a measurable impact on frontline clinical care. As one data scientist puts it, "... if you understand how current AI systems work, the applications in healthcare are narrow and limited. Yes, we can train AIs to recognise cancer on radiology scans and similar areas because we already have high-quality training datasets, but extrapolating that success to broader, more complex problems is entirely unwarranted".

But whatever its potential, AI is changing the relationship between the NHS and its users while shifting the power balance between the public and private sectors in the delivery and control of the NHS. The digitalisation of the NHS has been heavily pushed by Big Tech (Google, Apple, Microsoft, Amazon, Oracle, etc.) and other multinational corporations that are keen to have access to our health data. In addition, successive governments have seen the unregulated collection and use of personal data as key to innovation and economic growth. Finally, and not least, digitalisation and AI will change the relationship between the NHS and its workforce.

What is AI?

AI is a broad term that refers to the use of computer programmes that mimic the functioning of the human brain, its memory, 'intelligence' and other functions, such as language and translation, problem-solving, decision-making, and object, facial and voice recognition.

There are different types and subsets of AI, such as

- *machine learning* that analyses huge volumes of data to find patterns and develop algorithms with minimal human direction in order to support human decision-making. For example, machine learning algorithms can use patient data to track patterns of infection, as we saw during the Covid pandemic.
- *generative AI* that builds on machine learning and is extensively trained (and trains itself) on massive amounts of information to create new data (such as texts or images), which can then be refined by feedback from humans. In healthcare, generative AI can be used to automatically transcribe and summarise clinical notes, interpret images and test results to assist with diagnoses, or create personalised treatments for patients based on factors such as genetics, lifestyle and symptoms, while Large Language Models (LLMs) with their huge neural networks can solve novel reasoning problems.

The impact of AI on work in general

AI is creating a range of new jobs and professions (e.g. big data analysts, app designers, digital maintenance experts) while it may also be used to replace workers through the automation of tasks. However, overall, it's thought that AI is unlikely to lead to mass unemployment. Instead, it may be used to increase the efficiency of workers - for example, through a significant change of duties and retraining ('augmentation').

Initial concerns about the introduction of AI were primarily for blue collar jobs, especially those characterised by routine tasks that could be broken down into a series of steps that could be codified and programmed by a computer. However, the appearance of generative AI is most likely to impact

more on white collar, medium skilled professions. That said, much depends on the nature of work associated with an occupation. According to a report by McKinsey, as the use of AI grows, so will the demand for technological, social and emotional skills. In contrast, work predominantly requiring basic cognitive skills (e.g. basic data processing) are more likely to be automated, while demand for physical and manual skills will remain more or less the same. At the same time, generative AI is more likely to affect female employment than male, given that it's still predominantly women who are employed in the more vulnerable occupations such as office work, education, healthcare and community and social services. In addition, algorithms produced by AI are likely to reproduce current (human) biases and potentially exacerbate discrimination in the workplace and recruitment of the workforce.

Although digitalisation and AI have the potential to reduce the time spent on low value tasks and facilitate less tedious work and new roles, it can also lead to jobs being more precarious with poor labour rights, greater job complexity, increased workloads, high stress levels and, for IT staff, problems such as muscular-skeletal disorders, sleep disturbance and social isolation. These issues are especially likely if new ways of working are introduced without input from workers and unions. However, AI and its reshaping of the workforce may lead to a decline in the bargaining power of trades unions.

AI and the NHS

Digitalisation and artificial intelligence are changing the way public services function for both users and staff. AI holds significant promise – for example, in terms of predicting the progression of disease or reducing pressure on A&E departments. Already, AI is being used in planning services and to integrate existing systems. AI provides healthcare organisations with algorithms to inform clinical decisions and for symptom checking in services like 111. It's also used to search and analyse vast data sets e.g. from health records, wearable devices, clinical trials, and population studies, to discover disease patterns and determine patient risk. AI is now being used to triage GP patient appointments and to take the place of a second reader in radiology and histology on the basis that this can increase processing capacity and identify lesions that might otherwise be missed. Surgeons may use robots to carry out operations or use AI to develop their technical skills, while digital Cognitive Behavioural Therapy is being used to treat depression and anxiety.

Clearly, digitalisation and AI have the potential to improve services, and in some circumstances may help to improve working conditions for employees. However, in the context of the NHS, we should bear in mind that ICSs have a statutory duty to innovate and are pushed by NHS England to introduce digitalisation and AI at pace, even though this may mean poor evaluation of the risks.

AI and the NHS workforce

The following are just some examples of the implications of AI and digitalisation for the NHS workforce:

- *Changing the relationship with NHS users*

AI is changing ways in which NHS staff interact with service users, in some instances creating serious ethical and professional concerns by removing the human element from clinical judgements and replacing health professionals' context-based assessments of patient's health needs. For example, within nursing, the introduction of decision making algorithms coincides with the commodification of the profession, where nursing care is becoming defined in terms of measurable outputs that are given economic value. This is leading to a form of 'distal nursing' in which the specifically nursing knowledge that develops from hands on care and emotional labour is displaced by AI-informed 'care' that allows the monitoring of patients from afar. Such distal nursing potentially leads to a poorer experience for patients, possible risk and reduced job satisfaction for many nurses.

- *Increasing surveillance*

Potentially, AI could bring about new forms of employment relationships characterised, not least, by an increase in worker surveillance and performance-orientated management: workers' performance can be tracked, and algorithms that process performance data can lead to decisions about workload, targets, rotas and even pay, as well as informing decisions about staff retention or dismissal.

AI can also be used to allow unprecedented monitoring of clinical practice. For instance, the introduction of patient electronic records allows the collection of information about individual healthcare workers' practice (such as transcripts of their patient consultations, when and how often they have seen patients, along with details of prescriptions and investigations ordered etc), providing new ways to scrutinise everyday practice in great detail. This could inhibit clinicians from using their experience and clinician judgement, potentially to the detriment of patients' interests and at the risk of deskilling and demoralising highly trained staff.

- *Increasing productivity*

Demands for the NHS to increase productivity have led to expectations of flexibility on the part of the workforce – an agility that's facilitated by AI. NHSE expects ICSs to adopt a 'one workforce' approach with the collaboration and 'portability' of NHS staff across the ICS seen as critical to its success. Flexibility' is enabled by the use of Staff Electronic Records and digital 'passporting' that allow staff "to be deployed at different sites and organisations across (and beyond) the [Integrated Care] system": accreditation systems are stored on staff members mobile phones to provide information on individuals, including employment checks and occupational health. Moreover, according to the co-founder of Patchwork (a commercial company offering tech solutions to healthcare staffing problems), in order to deploy staff 'more effectively', the rostering of clinicians may be based on skillset rather than title or grade, so "giving staff the flexibility to safely work in a wider range of roles, in different locations across the ICS".

This sharing of the workforce across different providers within an ICS potentially involves new contracts cementing an employer's freedom to request that an employee works at a location other than their principle place of work, although the NHS Confederation has gone further and suggests that, additionally, there needs to be an "in-built expectation of flexible working across *clinical and non-clinical boundaries*" (our emphasis). Apparently, no thought is given as to whether it's practical for employees to travel to other sites, or what this 'agility' means for team work and ultimately for patient care or safety. Nor is it clear what happens to professional standards, or whether staff are expected to work for different organisations that have different terms and conditions. This flexibility, often dressed up as offering new professional development opportunities, potentially rides a coach and horses through Agenda for Change, the system that allocates most NHS posts to national pay bands based on the aspects of a particular job, such as the skills involved.

According to NHS Employers, data, including the personal data of staff, "should be readily available and accessible to facilitate a collaborative approach to effective workforce planning and resource allocation." Alarmingly, employers can process the personal data of staff, despite data protections, if they claim the movement of staff is in the employers' legitimate interests. At the same time, the 'portability' of staff will make it difficult for unions to strategise and organise collective action across work sites.

Proposals for a flexible workforce, especially if these entail a blurring of roles, rely on greater use of digitally-driven decision making, especially if demands for increased 'productivity' mean the replacement of highly qualified staff with less skilled personnel (such as physician associates).

- *Clinical decision-making and deskilling of healthcare professionals*

NHSE's Long Term Workforce Plan (2023) calls for innovative ways of working involving new roles, such as physician associates (PAs) and anaesthesia associates (AAs), ostensibly "so that staff can spend more time with patients." Would that this was so: rather, it seems that these Medical Associate Professionals (MAPs) are often replacing instead of augmenting existing staff.

Take, for example, the role of the physician associate. Small numbers of PAs have worked in some parts of the NHS since 2003 and, in some instances (for example, when a supported and integrated member of an inpatient ward team), appear to have made a positive contribution to patient experience and work flow. However, the use of PAs, and their scope of practice, is increasing, along with concerns about insufficient training and support.

The Workforce Plan describes PAs as medically trained generalist healthcare professionals with an undergraduate degree in a life science and/or a significant background in healthcare. As and when

they are brought under regulation by the General Medical Council, their scope of practice will expand – for instance to include prescribing responsibilities. Yet a 2023 [BMA survey](#) of doctors' views on PAs and AAs reported overwhelming concern in the way that these new workers were being employed: patient safety was being put at risk and accountability was unclear. Doctors reported that their workload increased and could even double when they supervised PAs because of concerns about insufficient knowledge, an inability to present a coherent history and examination, or to formulate a differential diagnosis.

Despite this, the role is due to expand, amid fears of an increased reliance on decision making technologies rather than comprehensive training and supervision. This means, for example, that a Medical Associate Professional may not be able to recognise when they are presented with inappropriate responses/advice from their AI support, and this carries major concerns for patient safety. The value of professional clinical judgement is again marginalised and highly trained and experienced staff are undervalued.

What can be done?

The UK government has no plans to introduce legislation to further regulate AI but, for the time being, it will bring in a [voluntary regulation regime](#), supported by guidance from the Department for Science, Innovation and Technology (for the HR and recruitment sector.) However, in April 2023, to protect future employment rights, the TUC formed a taskforce comprised of experts in law, HR, politics, technology and the voluntary sector, and this drafted an [Artificial Intelligence \(Employment and Regulation\) Bill](#) (2024).

The Bill aims to regulate protections and rights for workers, employees, job applicants, as well as trades unions, and sets out obligations for employers and prospective employers when dealing with AI based decision-making affecting workers.

The Bill's key provisions include that:

- employers ensure only safe AI systems are used in the workplace, using detailed risk assessments of AI decision-making and publishing a register of systems in use;
- employees and unions are fully consulted, involved and informed before high risk AI decision-making systems that have "legal effects or other similarly significant effects" are introduced;
- all parties will have a right to information about how the AI system is being used, with a further right to a human review of AI decision making;
- there will be a ban on emotion recognition technology used to the disadvantage of workers and those applying for work;
- there will be a right that protects employees from dismissal where this is based on an unfair reliance on a high-risk, decision making AI system;
- employers must properly audit an AI system and demonstrate that there is no AI based discrimination;
- unions have the right to the fair use of data so that they can be provided with the data collected by employers in relation to their members.

This draft legislation represents a start in protecting employees such as NHS staff from the negative impacts of AI on their employment and careers, and the dumbing down of expertise that AI can bring. We urge you to write to your MP to flag up the concerns raised by AI for the NHS workforce and ask them to support the adoption of the TUC Bill and its provisions.

For more information about the KONP Data Working Group, see [here](#)