

Runner-up Essay - What will British healthcare look like in 20 years' time?

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Projection into the future in any area is necessarily speculative, and healthcare is no exception. Being an institution that lies at the crossroads of social, economic, political, cultural, and scientific forces, and subject to all of them, healthcare is exposed to unexpected change in these times of great flux. However, none of these forces will have such a great impact on British healthcare as that of technology, which continues to advance exponentially. Technological innovation will disrupt healthcare on both the micro- and macro-level. In the case of the former, advancements in artificial intelligence (AI) will change the role of medical professionals, and improvements in medical imaging may transform diagnostic pathways. On a larger scale, increasingly effective, but expensive, tools and treatments may require us to rethink the organisation, and perhaps existence, of the NHS. Some trends in care, like its movement hospital to community, will accelerate whilst others terminate or reverse.

In 20 years' time the role of doctors will be different to what it is today, perhaps closer to that of nurses or counsellors. Computers excel in many areas that are important to medical practice, especially those where human cognition runs against hard limits. There are now more than 25 million records on PubMed[1] – it would take dozens of lifetimes for a doctor to read them all – but AI could rapidly incorporate these into its knowledge base. AI systems used in healthcare might be able to process 10s of millions of computerised records to find trends that are relevant to diagnosis and treatment. Though human doctors undoubtedly amass a huge amount of clinical knowledge through

meeting thousands of patients, they simply will not be able to compete with machines in the future. Even today, in the US, IBM's computer system 'Watson' has been involved in clinical oncology, making diagnoses and treatment plans that are more accurate than those made by doctors[2].

AI 'doctors' will soon surpass human doctors in terms of medical knowledge, diagnosis, prognosis, and treatment across a wide range of specialties. Where does this leave doctors? Few patients would want to be treated entirely by a machine, and there is no reason to believe they should. It will take far longer for computers to emulate the empathy and 'human element' displayed by doctors and other healthcare workers that are so valuable. Nor will they be able to notice the subtle, but important, cues that a doctor might; an unusual gait, a strange smell, a flash of sadness. Certainly, the job of surgeons will not change so much in only 20 years, as fine manual tasks are a key area where machines lag far behind us and will continue to for the foreseeable future[3]. However, even they may find that improvements in medical imaging make their own clinical knowledge redundant in some cases. Humans and machines will make an excellent team, but we must understand the limits of each to make it effective.

It is more difficult to predict how the NHS, and British healthcare more generally, will fare under technological and socio-political pressures. The NHS will likely still exist in 20 years, though in a diminished state. New technologies and treatments are becoming ever more expensive, and it will become more difficult for the NHS to meet demand without a radical increase in funding. For good or for

ill, private healthcare will begin to play a more prominent role as patients come to learn about and demand the newest medical developments. If individual purchasing power continues to increase[4], patients will become more willing to fund their own healthcare, though premiums will continue to rise. Fewer people should travel abroad for specialised treatment, and with legalisation of assisted dying a matter of when, not if, they may not be forced to travel for this service either. This being said, the British infatuation with the NHS runs deep and may make such changes politically unfeasible. Undoubtedly the demand for private medical care will increase regardless.

Primary care and public health will continue to be dominated by the NHS, given these services are provided more effectively through public funding[5], though GPs may find themselves forced to charge for some services. The move of care from hospital to community will accelerate with the development of wearable devices and other telemedicine technologies[6] [7]. These will allow doctors to monitor their patients' health and broaden provisions in their own homes, thus avoiding many hospital admissions by detecting problems before they escalate.

British healthcare in 20 years' time may be a very different beast to what it is today. Whilst demographic, political, and cultural change occurs slowly, technological change is rapid and unpredictable. It will be technology above all that transforms British healthcare, and should create a healthier and happier country.

References

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