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## Why hospital capacity is more complex than bed capacity

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It's easy and somewhat commonplace to liken healthcare to a widget factory, to boil it down to inputs and outputs; to capacity, productivity, and efficiency. I was reminded of this at last week's international quality and safety forum, jointly hosted by BMJ and the Institute for Healthcare Improvement. The event was held at the ExCel, London's homage to the austere corridor world of *Blake's 7*—and the site of a Nightingale hospital at the height of the covid pandemic. The Nightingale hospital was assembled in rapid time and added to hospital bed capacity.

But that extra bed capacity went unused, because hospital capacity isn't just about beds. It also requires, for example, trained staff and appropriate equipment. Counting the number of beds alone, it turns out, isn't especially useful in determining hospital capacity, particularly in intensive care. Kevin Fong and colleagues, in a sobering piece that should be widely shared with anybody sceptical of the pandemic's impact on health services (doi:10.1136/bmj-2023-075613), describe hospital capacity as a "complex property of a complex sociotechnical system."<sup>1</sup>

The same magical thinking—that bed capacity somehow conjures the staff, equipment, and expertise to accompany it—is the logical hole in political plans to use the private sector to reduce waiting lists (doi:10.1136/bmj.q858).<sup>2</sup> Beyond ideological objections, plans to engage the private sector are bedevilled by data gaps across a broad range of metrics, from workforce to patient outcomes (doi:10.1136/bmj-2024-079261).<sup>3</sup>

Critics attacked the NHS when the pandemic was most severe for crying wolf over being overstretched because the bed count exceeded bed usage. Yet the service was overstretched, care was compromised, and staff reported mental health symptoms at a rate of 47%, similar to that among Afghan war veterans. Despite the extraordinary efforts of staff, on the background of a depleted health service coming into the pandemic (doi:10.1136/bmj.q760),<sup>4</sup> intensive care capacity was exceeded, with knock-on effects on routine services and care.

It isn't hard, therefore, to understand the lasting damage to patient care and staff welfare. A third of UK doctors are considering leaving in the next 12 months to work abroad (doi:10.1136/bmj.q856).<sup>5</sup> Around four million people in the UK are out of work, and around the same number are living with a work limiting health condition (doi:10.1136/bmj.q734).<sup>6</sup> When relations between health and employment (and employment and health) have rarely seemed so critical, a decision by the NHS to review its practitioner support service and close it to new referrals seemed extraordinarily insensitive. The decision was overturned within 24 hours after a public outcry (doi:10.1136/bmj.q874).<sup>7</sup>

This undermining of healthcare staff is now a system failure within the NHS and government. What the public needs is a healthy, satisfied workforce, in the best possible shape to meet the population's health and wellbeing needs (doi:10.1136/bmj-2024-079474); a workforce that can fill the gaps in our knowledge and practice on the primary prevention and complications of the growing burden of atrial fibrillation (doi:10.1136/bmj-2023-077209 doi:10.1136/bmj.q826), implement the new advances in the diagnosis and management of type 1 diabetes (doi:10.1136/bmj-2023-075681), narrow the gender health gap (doi:10.1136/bmj.q787), and find solutions to the perplexing challenge of social care (doi:10.1136/bmj.q783), even in Northern Ireland, where, despite an integrated health and social care system, community and social care remain deprived of resources (doi:10.1136/bmj.q704).<sup>8-14</sup>

Healthcare isn't a widget factory. It's a complex sociotechnical system, growing more complex by the day with the impact of new technologies such as machine learning on medical science and clinical practice (doi:10.1136/bmj-2023-07806316 doi:10.1136/bmj.q749 doi:10.1136/bmj.q721).<sup>15-17</sup> Inputs and outputs matter. As do capacity, productivity, and efficiency. When you're struggling to make sense of medicine and healthcare, remember: it's the complexity, stupid ([https://en.wikipedia.org/wiki/It%27s\\_the\\_economy,\\_stupid](https://en.wikipedia.org/wiki/It%27s_the_economy,_stupid)).<sup>18</sup>

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