A Brexit miscalculation

I read with concern Nick Fahy and colleagues' Health Policy (Nov 4, p 2110)[1] about how Brexit might affect health and health-care services in the UK. I argue that their Health Policy has a logical flaw and a potential miscalculation (appendix). Fahy and colleagues' key anti-Brexit argument is that EU membership, protective legalities from the Court of Justice of the EU (CJEU), and free movement, tax, and childcare rights are essential to attract and retain much of the UK's National Health Service (NHS) workforce.

However, NHS workforce demographic data[2] indicate the NHS is able to attract and retain foreign staff from more than 160 nations from the rest of the world—ie, staff who are not from the EU or under CJEU legal supremacy, and who have none of these supposedly essential benefits. For example, doctors from India are equal to those from 23 EU nationalities combined, nurses from the Philippines outnumber those from 24 EU nationalities combined, and ambulance staff from Australia outnumber those from all EU nationalities.[2]

Additionally, the NHS is 29% less reliant on EU staff and 70% more reliant on staff from outside the EU than the wider UK economy workforce.[3] Since the referendum, recruitment and retention of staff from the rest of the world in NHS England have been at their highest for 6 years.[4] So why do Indian doctors and Filipino nurses continue to seek work in the UK health-care system without legal supremacy of their respective Supreme Courts and no freedom of movement rights? Fahy and colleagues do not review or even mention these trends to answer these questions.

Undeniably, the NHS does rely on a great many EU staff, and although the growth in their numbers has slowed down considerably since the referendum, their numbers have still increased by a net of 3193 since June, 2016.[2] There are also nuances even between certain roles and nationalities—eg, an additional net increase of 851 Polish and 492 Italian nationals, yet 261 fewer Spanish nationals, and 471 more doctors and 902 more scientific or technical professions, yet 163 fewer nurses, implying that a single-issue explanation is insufficient.[2] Although Fahy and colleagues do cite dramatically fewer EU and European Economic Area (EEA) nurse registrations with the Nursing and Midwifery Council to infer future negative consequences of Brexit, they do not cite that in the same time period EU and EEA doctor registrations with the UK General Medical Council show a markedly different trend. Numbers are "relatively stable", with only a "slight decrease" alongside "fewer EU doctors leaving the register" and an "increase in applications from doctors outside the EU".[5] They also do not mention that the high reliance of the NHS on EU nurses in relation to the rest of the world is a fairly recent phenomenon.

By leaving out this and other important context, Fahy and colleagues imply that Brexit alone will affect health and health-care services in the UK. This does not give the full picture, which would require broadening the discussion beyond the confines of the EU.

MT reports working as an unpaid volunteer for the Vote Leave campaign during the UK referendum, 2016, and collaborated on an article with Matthew Elliott, former chief executive officer of Vote Leave, for the website Kingdom Comment (owned by MT).

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See **Online** for appendix

Palliative care and the endless cycle of serious health-related suffering

As Richard Horton pointed out (April 14, p 1465),[1] obstacles to accessing palliative care affecting those living with serious health-related suffering are, without any doubt, "the most disfiguring inequity in health care today".

In high-income countries, most of the burden people have towards the end of their life lies with non-communicable diseases, multimorbidity, frailty, and polypharmacy. Some authors have described these as socially transmitted conditions;[2] indeed, end-of-life trajectories are partly shaped by and result from the deeply rooted and long-lasting effects of social determinants of health. They tend to target vulnerable populations throughout their whole lives and eventually end up overwhelming individuals, generating potentially catastrophic health expenditures. Internationally, social welfare and health systems offer variable protection against financial hardship, whereas social gradients in health affect societies as a whole.

People with financial difficulties tend to have the poorest health and the biggest care needs and, unfortunately, will also be less likely to access palliative care.[3,4] This issue must not be ignored, for the circle is now clearly complete: Michael Marmot's social determinants of health[5] reinforce

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Cicely Saunders' concept of total pain[6] and Julian Tudor Hart's inverse care law.[7]

Palliative care has recently been affirmed as an approach that can be implemented in various contexts, irrespective of specialty or care setting.

Primary health care has a major role to play in tackling health inequities. Integrating palliative care in primary health care might help reduce these inequities—something that specialist palliative care teams have been unable to achieve.[8] With the third UN high-level meeting on non-communicable diseases and the WHO global conference on primary health care happening at the end of 2018, this question of integration is of major urgency.

We declare no competing interests.

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The future of radiology: adding value to clinical care

The practice of radiology needs to change for three reasons: subjective decisions about tests are a major contributor to the overuse of services, images are often inconsistently obtained and analysed, and radiology reports often include vague descriptions.

The issue of overuse[1] could be overcome with better decision making and use of validated clinical predictions for individual disease probabilities, like those made available through iGUIDE. As discussed at the 2018 European Congress of Radiology, this method would also help medical students greatly improve their diagnostic decisions.

The technical integration of artificial intelligence with human analysis has great potential to increase consistency in image analysis and reduce errors.[2] For example, analysis of 4D images of the heart (which encompass 2–3 billion voxels) can be facilitated by automated motion correction and fractal analysis. This method was presented at the 2018 European Congress of Radiology. Moreover, in several applications such as mammography, artificial neural networks have been shown to be as accurate as radiologists. The greatest clinical value of a technical integration of artificial intelligence would be the paradigm shift to a bionic radiologist, similar to Dr Leonard McCoy in Star Trek, who combines the consistency of automation with human perception. The bionic radiologist would supervise the results generated by machine learning and integrate them with other data.

Structured radiology reports provide a choice of predefined descriptions, thereby maximising consistency and establishing a clearer link between tests and recommendations. Structured reports generated by a bionic radiologist could avoid missed care opportunities and bridge the gap between evidence-based and personalised treatment recommendations.

The Commonwealth Fund has shown that more money leads to poorer performance of health-care systems, which supports the concept of universal health coverage and high-quality personal health care.[3] The suggested future of radiology is pivotal in this respect, yet in practice would require a huge cultural change and more advanced IT equipment. A major challenge is the short half-life of data needed for clinical prediction rules[4] and other randomised imaging trials, and the regulatory and privacy issues that have to be overcome to share the data and establish the link between findings and treatment recommendations.[5]

Value-based radiology would ensure that patients' needs become a priority while still reducing costs. Finally, this process would allow the radiologist to become a more active participant in the nuances of patient care, which automatic systems are not good at—yet.

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