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Letter to the Editor

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UK diagnostics in the era of 'permacrisis': is it fit for purpose and able to respond to the challenges ahead?

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To the Editor,

The vital contribution of clinical diagnostics during the COVID-19 pandemic globally [1] and in the UK, has emphasised its crucial role in delivering the ambition of the NHS long term plan [2] and in helping post-pandemic recovery. Leveraging cross-sector strengths to build a fit-for-purpose, world-leading diagnostics enterprise has been highlighted in several recent reports [3–5]. While offering some exciting opportunities for development and expansion, this renewed interest in diagnostics places considerable burden on a sector that, for far too long, has remained outside of funding priority areas. Most importantly, as UK diagnostics attempt to decode lessons of the pandemic and redesign its strategy, new challenges are emerging in the form of scientific, operational and strategic deficits as well as capacity issues due to the COVID-19 related back-log.

Diagnostics is involved in all facets of modern healthcare. There is an expectation that rapid advances in -omics technologies, data sciences and AI-driven multi-parameter analysis will generate improved tools and disease-specific biomarkers to facilitate more practical approaches to precision medicine thereby enhancing operational efficiencies to manage the growing demand for NHS services. A system already stretched by long-standing health challenges that compromise the health of an increasingly ageing population would benefit from such approaches.

Despite significant progress post-pandemic, considerable barriers remain that require urgent action. Some of these challenges relate to the mindset of professionals involved in the delivery of diagnostics services, crystallised over years of having to focus on cost and efficiency savings and an understandable mentality to 'just deliver the core service' [6]. This mindset is reinforced by an activity-based funding system, that fails to incentivise innovation. Thus, the drive to explore disruptive innovation and position state-of-the-art diagnostics in close proximity to clinical and technological advances is stalled by slow decision-making processes and operational concerns. The pathology consolidation process established the foundations for spare workforce capacity to address such important considerations [7, 8]. Diagnostic services need to start exploiting such opportunities.

A successful future diagnostics strategy requires a combined approach involving active and flexible partnerships between NHS, academia and industry, and also between the diagnostics professionals and clinical teams. Connecting the currently fragmented landscape could be addressed by the development of flexible 'accelerator centres' of innovation drawing expertise from successful initiatives such as MICs and AHSNs [9]. These would need sufficient influence to catalyse change and innovation adoption in the NHS focussing on reducing healthcare inequalities [10]. In parallel, these 'centres' would be able to capitalise on emerging opportunities in new diagnostic technologies while also working with the higher education sector to provide appropriate training and up-skilling thereby creating a sustainable workforce.

Regulation reform is another area where a synchronised approach across stakeholders could catalyse rapid adoption and implementation of new technologies. A strong evidence-based regulatory framework is crucial to protect

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the public from 'disrupting' but misleading concepts and ensuring use of the right tools for the right patients at the right time. However, there are concerns that existing regulatory arrangements are too slow, unable to meet the demand and pace of innovation. This is currently depriving patients from access to technologies that can have substantial health benefits.

Post-pandemic, the UK Diagnostics stakeholders are trying to redefine their value proposition to address new health challenges of an ageing population and to exploit the unique characteristics of the NHS [11]. Workforce capacity and skills, development of fit-for-purpose regulation and pathways for innovation adoption are key determinants for optimal diagnostics services in a resource-limited healthcare landscape. The ever-changing environment of 'permacrisis' is our new normal with unknown consequences on mental and physical health [12]. The emergence of these new health challenges demands development of a diagnostics infrastructure that can support patients living continuously in a state where one challenge is followed continuously by the next, such as emerging infectious diseases, climate change, economic uncertainty and even war.

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