

Urgent work needed to tackle 'substantial' digital health inequality, study recommends

December 1 2023



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Millions of people are suffering from digital health inequality because of poverty, experts have warned.

[A new study](#) says urgent work is needed to ensure those from [deprived areas](#) can access [health](#) care as the NHS increasingly turns to the use of apps and online health portals for the provision of health care.

A team of doctors and academics found a "significant association" between increased poverty and reduced use of digital services. Their modeling estimates that this association accounts for 4.27 million patients across England who have not downloaded the NHS app. In October 2022, it was estimated more than a 37million patients had activated the NHS App—67.9 percent of the population.

Researchers used aggregate data about patients and their use of digital resources from 6,356 [primary care providers](#)—GP practice centers—in England to measure the link between characteristics such as patient demographics, socio-economic deprivation, disease burden, prescribing burden, geography, and health care provider resource, with activation of two universal digital health care interventions in the NHS—the NHS App, and online primary care portals.

As the data used was aggregated from national datasets, researchers couldn't identify any patients during the analysis.

The study was carried out by academics and doctors—Dr. Joe Zhang from Imperial College London, , Dr. Jack Gallifant from Imperial College Health Care NHS Trust and the Massachusetts Institute of Technology, Professor Robin L Pierce from the University of Exeter, Dr. Aoife Fordham from the Transformation Directorate, NHS England, Professor James T Teo from King's College Hospital NHS Foundation Trust, Professor Leo A Celi from Massachusetts Institute of Technology and Harvard T.H. Chan School of Public Health, and Professor Hutan Ashrafian from Imperial College London.

Professor Pierce said, "Our results are concerning and show how the use

of technology risks widening health care inequalities. Digital inequality between those from different socio-economic backgrounds is substantial. The study estimates deprivation is associated with reduced NHS app uptake in 4.27 million patients across England."

"What is needed now is for targeted work in communities to prevent digital disparity affecting health outcomes. As the NHS aims to make apps the 'front door' to health care, it is imperative that there is a frank and open discussion about equitable digital technology implementation."

The study says digital literacy and the availability of devices and infrastructure may account for some of the disparity. It recommends digital transformation must be context-specific, based on local understanding and tailored to specific populations.

Infrastructure, education, and engagement are also important and the roll-out of digital systems should be driven through those who run integrated care systems, who can build strong community links.

Dr. Zhang said, "Although we found inequalities, this is not necessarily a reason to decelerate. Rather, digitally-enhanced pathways may offer efficiency savings that can be re-directed to vulnerable and excluded populations."

The study says the NHS should proactively identify those communities at highest risk of digital exclusion, who would then get targeted attention. Dr. Zhang emphasized that the main contribution of this study is the quantification of digital health uptake. He points out that this can allow us to estimate the negative impacts of large-scale digital health interventions. It also recommends the NHS should publish data about disparities in uptake and outcomes.

Dr. Zhang said, "We have demonstrated substantial socio-economic

inequality in digital health utilization in NHS England. Such patterns will likely be observable in any health system undergoing rapid digital transformation. An approach that addresses needs of specific groups disadvantaged by the increasing use of digital health technology is urgently required to avoid worsening digital health inequality."

More information: Joe Zhang et al, Quantifying digital health inequality across a national healthcare system, *BMJ Health Care Informatics* (2023). [DOI: 10.1136/bmjhci-2023-100809](https://doi.org/10.1136/bmjhci-2023-100809)

Provided by University of Exeter

Citation: Urgent work needed to tackle 'substantial' digital health inequality, study recommends (2023, December 1) retrieved 28 April 2024 from <https://medicalxpress.com/news/2023-12-urgent-tackle-substantial-digital-health.html>

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