

Digital first during the COVID-19 pandemic: does ethnicity matter?



Published Online
 August 16, 2021
[https://doi.org/10.1016/S2468-2667\(21\)00186-9](https://doi.org/10.1016/S2468-2667(21)00186-9)

The UK's strategy to control COVID-19 has seen reliance on digital technologies, including electronic booking systems for testing and vaccination and a National Health Service COVID-19 app to support the National Health Service's Test and Trace programme. During the pandemic, the UK Government has invested heavily in digital technologies, with the design and implementation of the Test and Trace programme alone estimated to have a projected cost of £38 billion.¹

Such a response reflects the large-scale adoption of Public Health England's so-called digital-first policy.² This policy sets out the use of digital technologies for "protecting and improving the nation's health and wellbeing, and reducing health inequalities".² However, we would question the extent to which the reliance on digital technologies has reduced health inequalities during the pandemic. Here, we set out five key challenges to this objective (figure).

First, minority ethnic people (ie, all ethnicities except for White British) have been disproportionately affected by excess mortality in COVID-19. The latest data from the UK shows that the age-adjusted mortality rate for COVID-19 was considerably higher among minority ethnic people compared with people from a White British background. This difference is not solely accounted for by pre-existing comorbidities, biomarkers, socioeconomic status, and lifestyle factors.³ Since the pandemic has had unequal effects from the outset, the implementation of any policy, including a policy in digital health, should ensure that it improves rather than exacerbates pre-existing COVID-19 inequalities.

Second, the digital divide is most pronounced in older (ie, >55 years), minority ethnic adults. The UK Office for National Statistics showed that 92% of adults were recent internet users (ie, had used the internet in the 3 months before being surveyed) in 2020.⁴ However, usage is lowest among older, minority ethnic groups. The proportion of adults who were recent internet users from an Asian or Asian British background (ie, aggregated data for people identifying as Bangladeshi, Chinese, Indian, Pakistani,

or Asian other) was 83.6% for people aged 55–64 years, 64.8% for people aged 65–74 years, and 29.9% for people older than 75 years; these proportions compare with 93.5% for people aged 55–64 years, 83.8% for people aged 65–74 years, and 47.6% for people older than 75 years of White ethnicity (ie, defined as English, Welsh, Scottish, Northern Irish, or British; Irish; Gypsy or Irish Traveller; or any other White background).⁵

Third, barriers to digital inclusion are clustered in minority ethnic groups. Underlying reasons for the digital divide are varied. Scarcity of computer literacy was the primary barrier cited by Black and minority ethnic groups living in deprived communities within the UK in a report that was commissioned by the Department for Education and Skills.⁶ There are also economic and financial barriers to digital inclusion that disproportionately affect some minority ethnic groups. The UK Office for National Statistics has shown that, on entering the pandemic, minority ethnic groups (particularly Black African and other Black ethnic groups) had lower financial resilience than people identifying as White British and White other; Pakistani and Bangladeshi ethnic groups were more likely than White British individuals to report a worsening

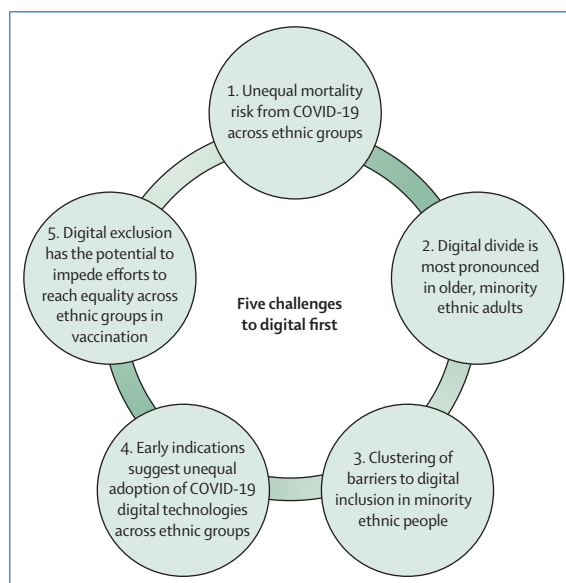


Figure: Five challenges to the UK's public health digital-first policy, as emphasised by the COVID-19 pandemic

financial situation between 2019, and April, 2020.⁷ The clustering of low digital access, low digital literacy, and financial hardship among minority ethnic people causes a triple disadvantage for digital inclusion.

Fourth, there appears to be unequal adoption of COVID-19 digital technologies. Trial data showed that only 33% of black and minority ethnic individuals downloaded the National Health Service's COVID-19 app, compared with 51% of people from a White ethnic background.⁸ Engagement with the roll-out of pillar 2 swab testing (ie, testing for the wider population through commercial partnerships) has predominantly been with people identifying as White (71.6%; ie, defined as English, Welsh, Scottish, Northern Irish, or British; Irish, Gypsy or Traveller; or any other White background).⁹ Since minority ethnic groups are at greater risk of infection than are White British people, these data reflect an under-representation of non-White individuals. There is a scarcity of publicly available data examining the proportion of people accessing a test online or via a telephone call; we would speculate that minority ethnic individuals would be less likely to engage with an electronic booking platform, particularly if they are also older or socioeconomically disadvantaged, or both.

Finally, digital exclusion has the potential to impede equal exit from COVID-19. Vaccination hesitancy is highest among minority ethnic groups and is shown in vaccine uptake.¹⁰ The lowest vaccination rates in people aged 70 years and older are among individuals identifying as Black African and Black Caribbean, followed by people from a Bangladeshi and Pakistani background. Compared with people from a White British ethnic background, individuals from a Black African ethnic background were 5.5 times more likely to not have had a first vaccination, even after statistical adjustment for relevant health and sociodemographic factors.¹¹ Although we recognise the considerable government investment to fund community engagement to reduce vaccination hesitancy, we hypothesise that digital exclusion acts an additional barrier, which hinders the uptake of vaccination for people who are reluctant or unable to engage with the electronic booking site. We urge that these data should be made publicly available, so that we can directly test this hypothesis.

In conclusion, we suggest that the digital-first approach is not fulfilling its aim to reduce health inequalities in the

UK. COVID-19 has brought to light stark inequalities in mortality by ethnicity, and the public health campaign has reinforced, and perhaps even widened, its unequal effects. Community engagement interventions by use of existing structures offer an alternate approach to communicating public health messages in diverse populations and have an evidence base from previous pandemics.¹² But these community strategies have fallen far behind the push for digital first. We suggest that a more inclusive policy would be a so-called digital-alongside policy, levelling up the implementation of these mitigation strategies to reduce health inequalities. Digital alongside would be a more equitable policy whereby digital technology is used to increase the reach of public health messages to people who have the means and ability to access information online, but it would complement rather than replace other tried-and-tested routes that facilitate health promotion among the digitally excluded.

We declare no competing interests.

Copyright © 2021 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

*Lydia Poole, Mel Ramasawmy, Amitava Banerjee
 lydia.poole@ucl.ac.uk

Institute of Health Informatics, UCL, London NW1 2DA, UK

- 1 National Audit Office. COVID-19 cost tracker. <https://www.nao.org.uk/covid-19/cost-tracker/> (accessed May 24, 2021).
- 2 Public Health England. Digital-first public health. Feb 2, 2017. <https://www.gov.uk/government/publications/digital-first-public-health> (accessed May 24, 2021).
- 3 Batty GD, Gaye B, Gale CR, Hamer M, Lassale C. Explaining ethnic disparities in COVID-19 mortality: population-based, prospective cohort study. *medRxiv* 2021; published online Feb 10. <https://doi.org/10.1101/2021.02.07.21251079> (preprint).
- 4 Office for National Statistics. Internet users, UK: 2020. April 6, 2021. <https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2020> (accessed Aug 5, 2021).
- 5 Office for National Statistics. Internet use: by ethnicity and age group. Sept 5, 2019. <https://www.ethnicity-facts-figures.service.gov.uk/culture-and-community/digital/internet-use/latest#by-ethnicity-and-age-group> (accessed May 24, 2021).
- 6 Owen DW, Green AE, McLeod M, Law I, Challis T, Wilkinson D. The use of and attitudes towards information and communications technologies (ICT) by people from Black and minority ethnic groups living in deprived areas, research report 450. Nottingham: Department for Education and Skills, 2003.
- 7 Office for National Statistics. Coronavirus and the social impacts on different ethnic groups in the UK: 2020. Dec 14, 2020. <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/articles/coronavirusandthesocialimpactsondifferentethnicgroupsintheuk/2020> (accessed May 25, 2021).
- 8 Department of Health and Social Care. NHS COVID-19 app: early adopter evaluation report. April 8, 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/976862/EA_report_April_2020.pdf (accessed May 25, 2021).
- 9 Department of Health and Social Care. Demographic data for coronavirus (COVID-19) testing (England): 28 May to 26 August. Sept 4, 2020. <https://www.gov.uk/government/publications/demographic-data-for-coronavirus-testing-england-28-may-to-26-august/demographic-data-for-coronavirus-covid-19-testing-england-28-may-to-26-august> (accessed May 25, 2021).

-
- 10 Razai MS, Osama T, McKechnie DGJ. COVID-19 vaccine hesitancy among ethnic minority groups. *BMJ* 2021; **372**: n513.
 - 11 Office for National Statistics. Coronavirus and vaccination rates in people aged 70 years and over by socio-demographic characteristic, England: 8 December 2020 to 11 March 2021: ethnic group. March 29, 2021. <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthinequalities/bulletins/coronavirusandvaccinationratesinpeopleaged70yearsandoverbysociodemographiccharacteristicengland/8december2020to11march2021#ethnic-group> (accessed May 25, 2021).
 - 12 Gilmore B, Ndejjo R, Tchetchia A, et al. Community engagement for COVID-19 prevention and control: a rapid evidence synthesis. *BMJ Glob Health* 2020; **5**: e003188.