

Horizon scanning

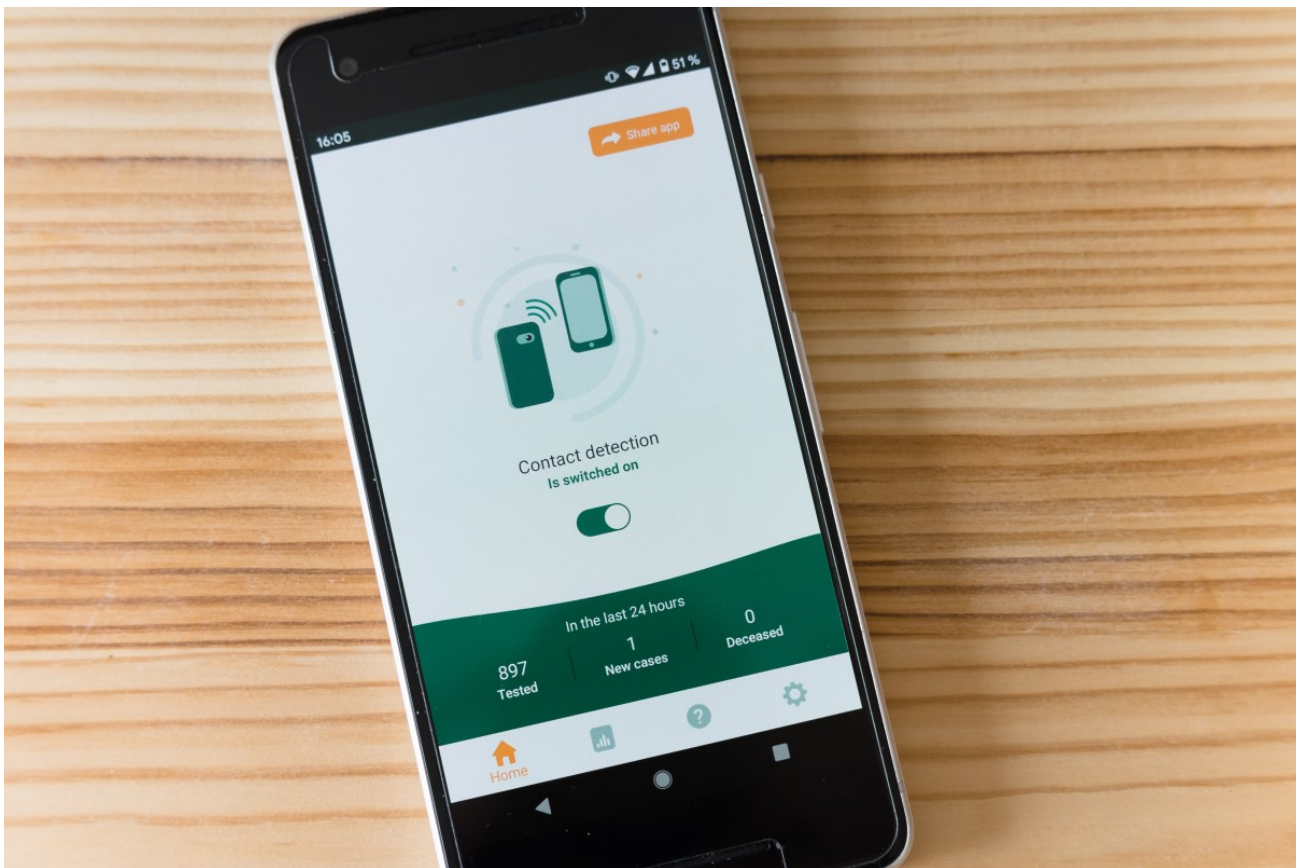
Use of digital technologies to tackle pandemics

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Horizon scanning Digital tech Health and social care COVID-19 Research

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Many innovations have improved the COVID-19 response and could be key for future-proofing against pandemics. What are the governance and privacy concerns?



Overview of change

Digital technologies are being used in new ways to respond to the COVID-19 pandemic. In some cases, this rapid deployment is pushing the boundaries of what people normally consider to be acceptable levels of surveillance, raising concerns about privacy, transparency, discrimination, and social exclusion.^{1,2,3}

Digital innovations being used to address the challenges of the pandemic include:

- Artificial intelligence (AI) to assist with rapidly sequencing virus genomes,⁴ planning public health responses,⁵ and identifying potential treatments.⁶
- Drones transporting medicine and equipment between medical sites in Scotland.⁷
- Robots used in hospitals in China and elsewhere for basic tasks such as delivering food.⁸
- Symptom tracking apps, such as that created by UK academics and start-up company ZOE.⁹

- [Contact tracing apps](#) that notify users if they have come into contact with other app users who have received a positive test result.
- Facial recognition for checking people's temperature at Chinese airports and railway stations.¹⁰

The release of mobility data by Google and Foursquare to help understand how COVID-19 policies affect how communities move around.^{11,12}

Challenges and opportunities

Many innovations have improved the pandemic response and are likely to increase preparedness for future epidemics. New uses of digital technologies have also been demonstrated, which could lead to wider use in other settings. But some uses have raised concerns about privacy, transparency, social exclusion and discrimination, especially when deployment has been rapid and scrutiny limited. Examples include:

- A QR code in China for monitoring people's health status, which allows businesses and public facilities to choose whether to permit access.^{1,13,14} authorities in the city of Hangzhou propose using it to monitor people's health on a permanent basis.
- Reportedly, millions of people in India have been required to download a voluntary COVID-19 tracking app by major employers and landlords.¹⁵
- Use of mobile phone data (originally collected for counterterrorism) in Israel to retrace the movements of people with the virus and identify others they have come into contact with.¹⁶
- The proposed use of vaccine passports which, for example, could help to improve safety but might exclude or discriminate against certain groups.¹⁷
- Severe limitations in the performance and clinical readiness of computer models developed to estimate the risk of people being infected or experiencing a poor outcome from an infection, which could lead to bias when triaging patients or allocating limited healthcare resources.¹⁸

A [POST survey](#) of over 1,100 experts found that more than 30 were concerned by the reduction of digital privacy during the pandemic. Issues included a lack of public trust in contact tracing apps,¹⁹ potential use of people's data in ways they do not expect, and that increased surveillance in the short-term may lead to its normalisation and greater privacy breaches in the long-term.

Key unknowns

- How has the pandemic enhanced governments' and companies' technical abilities to collect data? How will these be used in future, for example in countries with few personal data protections?
- How will attitudes towards state surveillance and privacy be affected in the longer-term?
- How will use of technologies during the pandemic shape public attitudes to other technologies in the future? Will public trust be undermined, stopping potential benefits from being realised?

Key questions for Parliament

- What can the UK learn about digital technology use during the pandemic and how can this be applied to future emergency responses?
- How can the UK develop and implement more trustworthy and responsible data practices to ensure public confidence in data usage?
- How might use of technologies expand beyond the pandemic to other applications that are not in the public interest or do not have public support? How can this be mitigated against?
- What mechanisms are in place to understand public opinion and build consensus around what uses are acceptable? How effective are they?
- How can data sharing between public bodies be supported in the future?
- What role should the private sector play in public health programmes?
- How can positive technological advances be built upon and what role should governments play?
- How can the UK shape standards for technologies made in other countries but used in the UK?

Likelihood and impact

- Likelihood: high
- Impact: medium, happening now



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