COVID-19 app saved estimated 10,000 lives in its first year, research finds
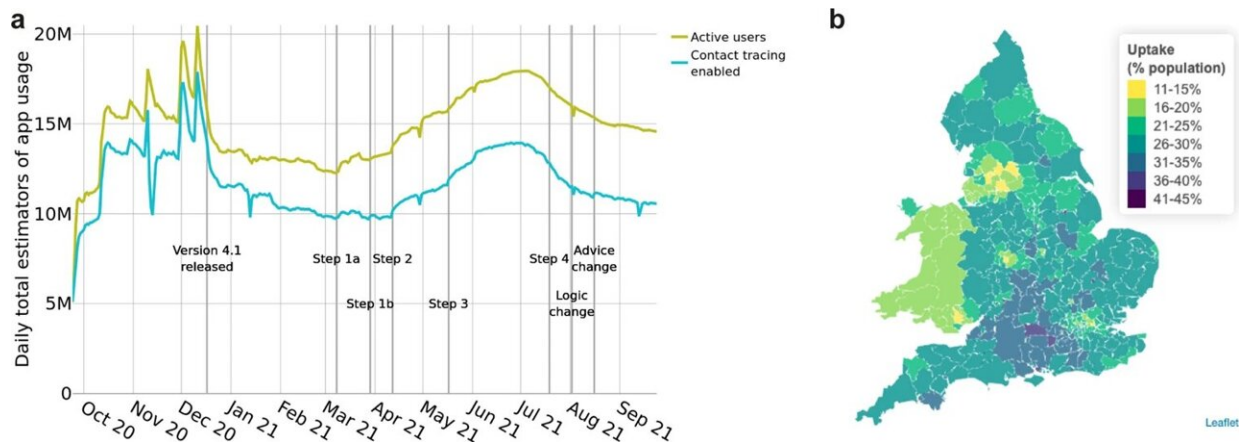
February 22 2023

App usage. a The number of active app users across England and Wales, and the number of devices with Bluetooth contact tracing enabled. b App uptake per LTLA, estimated as the mean number of active users as a proportion of the total population. Credit: *Nature Communications* (2023). DOI: 10.1038/s41467-023-36495-z

A team of experts at the Pandemic Sciences Institute at the University of Oxford and Department of Statistics at the University of Warwick estimate the NHS COVID-19 app prevented around 1 million cases, 44,000 hospitalizations and 9,600 deaths during its first year.

The new research, published in *Nature Communications*, is the most comprehensive evaluation of the NHS COVID-19 contact tracing app to

date.

Researchers analyzed the NHS COVID-19 app in England and Wales in the first year of its use—September 2020 to September 2021. They found that the app played an important role in reducing transmission of COVID-19 in England and Wales. The app experienced high user engagement, identified infectious contacts well, and helped to prevent significant numbers of cases, hospitalizations and deaths.

Professor Christophe Fraser, Principle Investigator at the Pandemic Sciences Institute at the University of Oxford's Nuffield Department of Medicine and the paper's senior author said, "Many of us will remember being 'pinged' by the NHS COVID-19 app at the height of the pandemic, and the impact that self-isolating had on our daily lives."

"Our research shows that the NHS COVID-19 app worked, and it worked well. Through our analysis we estimate the app saved almost 10,000 lives in its first year alone."

"The app prevented people transmitting the virus by generating notifications that they had been exposed to confirmed cases. The app's effectiveness improved over time, particularly as rapid testing became more widely adopted, reducing the need for people to self-isolate following a 'ping.'"

"We find that digital contact tracing, a relatively low-cost and rapidly available intervention is a valuable public health measure for reducing transmission in any future epidemic waves of COVID-19 or similar viruses."

Dr. Michelle Kendall, Research Fellow in the Department of Statistics at the University of Warwick and the paper's first author said, "Due to the privacy-preserving design of the app, a user who entered their positive

test result and agreed to anonymously notify their contacts cannot know the individual impact of their actions."

"Nevertheless, our research shows that the app was successful in quickly alerting people at high risk of having been infected. Collectively, the millions of users in England and Wales who engaged with the app and followed the guidance of its notifications helped to substantially reduce case numbers, reduced pressure on the NHS, and saved lives."

The NHS COVID-19 app was launched in England and Wales on 24 September 2020, with over 10 million people installing it in the first few days. Although app use varied over time and across the country, the app remained popular throughout its first year, with a high proportion of people using it compared to similar apps across Europe.

The app worked by using Google and Apple's Bluetooth contact tracing function to reduce transmission of SARS-CoV-2, the virus that causes COVID-19. The app quickly notified people at higher risk of having been infected, so that they could reduce their chances of passing on an infection. The research found that all times, an app notification meant you were at least twice as likely to be infected as a non-notified app user, and at peak times this was as high as 77 times more likely.

Dr. Isabel Oliver, Chief Scientific Officer at UK Health Security Agency said, "The NHS COVID-19 app is a really practical example of how [modern technology](#) can be used to protect the nation's health and the economy during a pandemic, by letting people know if they had been in contact with a positive case of COVID-19 and providing advice to help reduce the risk of passing the virus on to other people."

"These findings indicate that the app made a key contribution to breaking the chains of transmission with an estimated 1 million cases, 44,000 hospitalizations, and 9,600 deaths prevented in the first year."

"We've consolidated the skills, technology and lessons of NHS Test and Trace, such as the potential applications of a contract tracing [mobile app](#), into the UK Health Security Agency to inform preparedness for future pandemic threats. Our learnings from the pandemic continue to shape how we, and our partners around the world, respond to future public health risks."

The study adds to the growing body of evidence that shows digital contact tracing apps have major potential for reducing transmission of COVID-19, when combined with strong user engagement.

Provided by University of Oxford