

Apps to Track the New Coronavirus Have an Old Problem: Getting the Downloads

At least 60% of a population would have to opt in for contact-tracing apps to work well, some experts say

By David Uberti

April 28, 2020 7:15 pm ET

{photo}

Caption: The Care19 mobile app is being used in North Dakota to trace persons who have had contact with anyone infected with the coronavirus. Tim Brookins, one of the app's developers, says more than 25,000 people have downloaded it since April 7.

Photo: Paresh Dave/Reuters

Researchers at Covid Watch, an international group of academics building a mobile app to track the novel coronavirus, have one number in the back of their minds: 60%. That is a commonly cited percentage of the population that would need to adopt any such Bluetooth-enabled app to paint a clear picture of Covid-19.

"Below that would still have an impact, but it'd be less of an impact," said Rhys Fenwick, an Australia-based co-founder of Covid Watch, which includes researchers at Stanford University and the University of Waterloo.

Contact-tracing is key to fighting many diseases. In recent weeks, various app developers have been working to bolster the efforts of human disease detectives, who find and interview acquaintances of contagious individuals to track the virus's spread. Mobile phone data could broaden their reach by automating the process.

{video}

Caption: How Coronavirus-Tracking Apps Work

Public health authorities, developers and tech companies are working on apps to help us keep track of who we came in contact with and where we've been to aid in Covid-19 contact-tracing efforts. WSJ's Joanna Stern explains the technologies using an 8-bit video game.

But the looming challenge will be to convince enough people to hit the download button, said Jenny Wanger, lead at the TCN Coalition, a global consortium of app developers, including Covid Watch, working to combine their collective reach.

"We could build the most beautiful app, and if nobody downloads it, it doesn't matter," Ms. Wanger said.

Bluetooth can provide privacy features that might entice more people to opt in because the technology measures a user's proximity to infected people, Ms. Wanger said. GPS data, on the other hand, shows physical locations with a centralized server and can more easily point back to individual users.

The downside of Bluetooth is that both people in a given interaction must have the apps in order for their phones to exchange relevant data, meaning developers and officials have to get participation to rise.

Christophe Fraser, an infectious disease expert at Oxford University who researches digital contact-tracing, said more than half of U.K. residents would need to have a Bluetooth-enabled app to reverse the coronavirus's growth. Instant notifications of at-risk users, coupled with other measures like quarantines, could reduce the estimated number of people a contagious person infects from as many as three without public health interventions to below one, the replacement rate.

"Our models show we can stop the epidemic if approximately 60% of the whole U.K. population use the app and adhere to the app's recommendations," Mr. Fraser said in an email. The total also includes residents who don't have smartphones that can support the technology.

The need for widespread adoption makes some privacy advocates anxious that using such an app could become the de facto price of admission to a reopening economy, such as entering a grocery store or office.

"As these systems are deployed, we need to keep the really sharp eyes as a society to make sure that they don't become effectively mandatory, and that people can continue to live their life without it," said Daniel Kahn Gillmor, senior staff technologist at the American Civil Liberties Union.

Singapore officials said in mid-April that roughly one-fifth {20%} of residents downloaded the country's TraceTogether app a month after its rollout, far short of the 75% goal, with nonusers citing privacy as a primary reason to pass. Representatives for the Government Technology Agency didn't respond to requests for updated numbers this week.

In Australia, officials say that more than 8% of the population downloaded the COVIDSafe app since

its release on Sunday. A Department of Health spokesperson said the government hopes to reach 40% of residents through a marketing campaign that spans TV, print and social media.

Reinforcing the old-fashioned efforts

The U.S. hasn't rolled out a nationwide coronavirus tracing app, leaving state and local authorities to explore tools that fit within their individual coronavirus initiatives. As public health officials explore partnerships with software developers, states are expanding their traditional outreach, or "manual" contact-tracing efforts as well. Washington Gov. Jay Inslee said his administration plans to build a team of roughly 1,500 disease detectives by mid-May, while New York City and state officials have also pledged to staff up.

Until coronavirus testing is expanded and app adoption rates grow, developers should focus on helping out these in-person efforts, said Shyam Gollakota, a University of Washington professor. His team's app, CovidSafe, is designed to also allow patients and medical professionals to share data more easily through automated forms.

"What we should be thinking about is how to make a manual contact-tracer's job easier, rather than trying to replace them," Mr. Gollakota said.

Experts hope that any patchwork of apps in different states and countries can eventually interact through shared protocols, including one from Apple Inc. and Alphabet Inc.'s Google. The companies this month announced a programming infrastructure for Bluetooth-enabled apps designed to avoid location data. Neither Apple nor Google responded to requests for comment.

Tim Brookins, one of the developers behind North Dakota's Care19 app, said he is still unsure how the state's digital contact-tracing effort will be able to plug into the Apple-Google project. ProudCrowd LLC, Mr. Brookins's company, is best known for an app that connects North Dakota State University football fans during the team's frequent national championship runs. The firm is now using a combination of Wi-Fi location data, triangulation using cell towers and GPS data in the hope of pinpointing coronavirus hot spots, Mr. Brookins said.

ProudCrowd's Care19 app gives users an anonymized ID number tied to their location, which users must agree to share with health officials. More than 25,000 users have downloaded the app since

April 7, Mr. Brookins said. He hopes to triple that number to roughly 10% of all North Dakotans.

"The problem is you're asking people to give up sensitive data," he said. "Even if it is all anonymous and whatnot, they're still concerned."

Write to David Uberti at david.uberti@wsj.com

Link

<https://www.wsj.com/articles/apps-to-track-the-new-coronavirus-have-an-old-problem-getting-the-downloads-11588115728>