

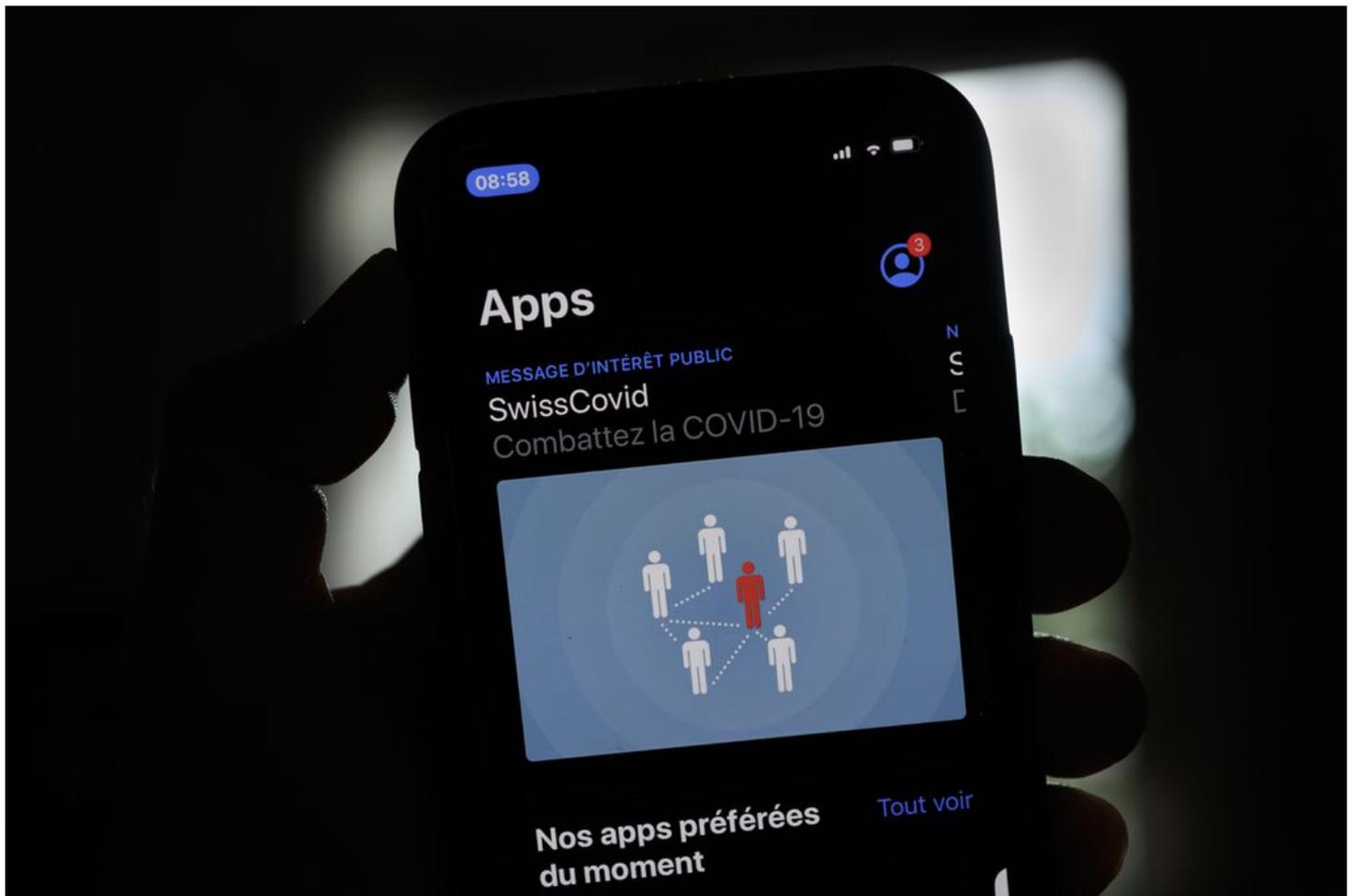
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OPINION

# Contact tracing is essential to preventing another spike in coronavirus infections

Stay-at-home orders can be prevented if states become more successful at preventing COVID-19 infected people from infecting others.

By **Christine K. Cassel and Susan L. Graham** Updated July 13, 2020, 3:00 a.m.



The tracing smartphone app "SwissCovid," created by the Swiss Federal Institute of Technology Lausanne and designed to trace people potentially infected with COVID-19 that the Swiss government rolled out to the public on June 25. FABRICE COFFRINI/AFP VIA GETTY IMAGES

The coronavirus has been devastating to the health of our nation, to the structure of our daily lives, to our families and friends, and to our economy. Until there is an effective treatment or a vaccine, the only way to reduce the pandemic's damage is to limit the spread of the virus by minimizing our contacts with infected people. When there were many infected people and we didn't know who they were, we used stay-at-home orders — separating everyone, whether or not they were infected with COVID-19 or exposed to the virus.

Stay-at-home advisories have worked, but at enormous cost to our lives and our livelihoods. Now people are tired of staying home and eager to get the economy

restarted. We can open up our communities safely — especially when the prevalence of infection decreases — if we can be more successful at preventing infected people from infecting others.

Two approaches less drastic can reduce the spread of infection when people adhere to them. Social distancing keeps people apart, whether infected or not, without requiring them to stay at home. And wearing face masks and other protective equipment reduces virus transmission even if people are in close proximity.

But sometimes unprotected contact between people happens anyway. So we need to identify people who have been exposed, and thus are at increased risk of having been infected, and keep them away from everyone else until we know they're not infected. If a contact has been exposed and might become infected, fast action can keep that contact from infecting others. Ideally, the contact will be tested. If the test is positive, the contact should be isolated and treated. If the test is negative, it might be because the infection was still ramping up, so the test should be repeated. If testing is not available, the contact needs to self-quarantine for two weeks.

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We can identify some infected people because they have symptoms or have a positive test for the virus. Finding more of the infected people quickly and keeping them from exposing others is hard because people can be infected and not know it. Often they infect others before any symptoms appear. In some people, symptoms never appear. Finding infected people sooner, even if they have no symptoms, is what contact tracing does.

A new report, ["The Role of Contact Tracing in the Control of Microbial Epidemics, Including COVID-19,"](#) by the two of us and seven others who worked on pandemic issues during the Obama administration as members of the President's Council of Advisors on Science and Technology (PCAST), addresses this issue. The report discusses two strategies to identify the contacts:

- **Ask the infected person.** That's what human contact tracers do — they interview the infected person and ask them to name all the people with whom they interacted.
- **Check the person's mobile phone to see what other mobile phones it was near in the recent past.** That's what digital contact tracing does. Why do we need both? Successful interviewing depends on the willingness of the infected person to be interviewed, on their memory of whom they interacted with, and on their trust in sharing information about their contacts. Successful digital contact tracing depends on the person's phone having already recorded data about past nearby phones, including distance and duration.

Human interviews identify contacts we know and remember — people we had dinner with, people we chatted with when we ran errands, people who took care of our kids.

Digital tracing identifies phones of strangers — people we stood near in line at the pharmacy, or in a park, or at a demonstration or rally, or people who were on the bus or subway with us — as well as the phones of people we know.

Success in identifying contacts depends on trust — confidence that contact information will be used only to notify exposed people and for no other purpose, and confidence that the identity of an infected person will be used only to help them with their illness. Establishing that trust must be a partnership between the communities being served and service providers. Trust in human interviewers and in digital tools is essential to their use.

Will digital contact tracing infringe on the privacy of infected people and their contacts? It could if it were misused, but that can be prevented. Collecting phone proximity on your own phone doesn't disclose information if nobody else can see it. It's when the data get used that care is needed. That means sharing the data only with a trustworthy entity, hiding your identity and the location of the contact, limiting use of the data to notifying contacts who are exposed and telling them whom to call that's trustworthy, and destroying the data as soon as it's not relevant for finding contacts. We know how to put these protections in place. The challenge is for people to feel comfortable with those protections.

Once a contact is identified, public health workers come into the picture. They can help arrange testing, find resources for quarantine such as a place to stay, care for dependents, funds to make up for lost work, and so forth. And they can help with treatment if the contact turns out to be infected. But those workers must be skilled at their jobs, and the resources for quarantine, for treatment, and for public health worker support must be available.

The [Massachusetts Community Tracing Collaborative](#) is an early and thoughtfully designed program that meets many of our criteria. Members of the public should answer when they are called by the MA COVID Team.

Contact tracing has been successful in protecting people from earlier epidemics like polio and Ebola, and it was the major tool to eradicate the scourge of smallpox from the world. We are fortunate now to be adding the tool of digital science to the public health toolbox, as some other countries have done successfully. If we take advantage of contact tracing, with the right built-in protections for privacy and civil rights, it can help us get back to work, back to school, back to our lives.

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