

# Here are the innovations we need to reopen the economy

By Bill Gates

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It’s entirely understandable that the national conversation has turned to a single question: “When can we get back to normal?” The shutdown has caused immeasurable pain in jobs lost, people isolated and worsening inequity. People are ready to get going again.

Unfortunately, although we have the will, we don’t have the way — not yet. Before the United States and other countries can return to business and life as usual, we will need some innovative new tools that help us detect, treat and prevent [covid-19](#).

It begins with testing. We can’t defeat an enemy if we don’t know where it is. To reopen the economy, we need to be testing enough people that we can quickly detect emerging hotspots and intervene early. We don’t want to wait until the hospitals start to fill up and more people die.

Innovation can help us get the numbers up. The current [coronavirus](#) tests require that health-care workers perform nasal swabs, which means they have to change their protective gear before every test. But our foundation supported research showing that having patients do the swab themselves produces results that are just as accurate. This

self-swab approach is faster and safer, since regulators should be able to approve swabbing at home or in other locations rather than having people risk additional contact.

Another diagnostic test under development would work much like an at-home pregnancy test. You would swab your nose, but instead of sending it into a processing center, you'd put it in a liquid and then pour that liquid onto a strip of paper, which would change color if the virus was present. This test may be available in a few months.

We need one other advance in testing, but it's social, not technical: consistent standards about who can get tested. If the country doesn't test the right people — essential workers, people who are symptomatic and those who have been in contact with someone who tested positive — then we're wasting a precious resource and potentially missing big reserves of the virus. Asymptomatic people who aren't in one of those three groups should not be tested until there are enough for everyone else.

The second area where we need innovation is contact tracing. Once someone tests positive, public-health officials need to know who else that person might have infected.

For now, the United States can follow Germany's example: interview everyone who tests positive and use a database to make sure someone follows up with all their contacts. This approach is far from perfect, because it relies on the infected person to report their contacts accurately and requires a lot of staff to follow up with everyone in person. But it would be an improvement over the sporadic way that contact tracing is being done across the United States now.

An even better solution would be the broad, voluntary adoption of digital tools. For example, there are apps that will help you remember where you have been; if you ever test positive, you can review the history or choose to share it with whoever comes to interview you about your contacts. And some people have proposed allowing phones to detect other phones that are near them by using Bluetooth and emitting sounds that humans can't hear. If someone tested positive, their phone would send a message to the other phones, and their owners could get tested. If most people chose to install this kind of application, it would probably help some.

Naturally, anyone who tests positive will immediately want to know about treatment options. Yet, right now, there is no treatment for covid-19. Hydroxychloroquine, which works by changing the way the human body reacts to a virus, has [received a lot of attention](#). Our foundation is funding a clinical trial that will give an indication whether

it works on covid-19 by the end of May, and it appears the benefits will be modest at best.

But several more-promising candidates are on the horizon. One involves drawing blood from patients who have recovered from covid-19, making sure it is free of the coronavirus and other infections, and giving the plasma (and the antibodies it contains) to sick people. Several major companies are working together to see whether this succeeds.

Another type of drug candidate involves identifying the antibodies that are most effective against the novel coronavirus, and then manufacturing them in a lab. If this works, it is not yet clear how many doses could be produced; it depends on how much antibody material is needed per dose. In 2021, manufacturers may be able to make as few as 100,000 treatments or many millions.

If, a year from now, people are going to big public events — such as games or concerts in a stadium — it will be because researchers have discovered an extremely effective treatment that makes everyone feel safe to go out again. Unfortunately, based on the evidence I've seen, they'll likely find a good treatment, but not one that virtually guarantees you'll recover.

That's why we need to invest in a fourth area of innovation: making a vaccine. Every additional month that it takes to produce a vaccine is a month in which the economy cannot completely return to normal.

The new approach I'm most excited about is known as an RNA vaccine. (The first covid-19 vaccine to start human trials is [an RNA vaccine](#).) Unlike a flu shot, which contains fragments of the influenza virus so your immune system can learn to attack them, an RNA vaccine gives your body the genetic code needed to produce viral fragments on its own. When the immune system sees these fragments, it learns how to attack them. An RNA vaccine essentially turns your body into its own vaccine manufacturing unit.

There are at least five other efforts that look promising. But because no one knows which approach will work, a number of them need to be funded so they can all advance at full speed simultaneously.

Even before there's a safe, effective vaccine, governments need to work out how to distribute it. The countries that provide the funding, the countries where the trials are

run, and the ones that are hardest-hit will all have a good case that they should receive priority. Ideally, there would be global agreement about who should get the vaccine first, but given how many competing interests there are, this is unlikely to happen. Whoever solves this problem equitably will have made a major breakthrough.

World War II was the defining moment of my parents' generation. Similarly, the coronavirus pandemic — the first in a century — will define this era. But there is one big difference between a world war and a pandemic: All of humanity can work together to learn about the disease and develop the capacity to fight it. With the right tools in hand, and smart implementation, we will eventually be able to declare an end to this pandemic — and turn our attention to how to prevent and contain the next one.

**Source:** <https://www.washingtonpost.com/opinions/2020/04/23/bill-gates-here-are-innovations-we-need-reopen-economy/>