When Will We Know the Pandemic Is Over
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The Biden administration put out a comprehensive national strategy in late January for "beating COVID-19." The 200-page document includes many useful goals, such as "Mount a safe, effective, and comprehensive vaccination campaign." But nowhere does it give a quantitative threshold for when it will be time to say, "Okay, done—we've beaten the pandemic."

A month later, it's time to get specific. The facts are undeniable: The seven-day average of new cases in the United States has fallen by 74 percent since their January peak, hospitalizations have gone down by 58 percent, and deaths have dropped by 42 percent. Meanwhile, more than 60 million doses of vaccine have gone into American arms. At some point—maybe even some point relatively soon—the remaining emergency measures that were introduced in March 2020 will come to an end. But when, exactly, should that happen?

The problem is that the "end of the pandemic" means different things in different contexts. The World Health Organization first declared a "public health emergency of international concern" on January 30, 2020, holding off on labeling it a "pandemic" until March 11. The imposition (and rescinding) of these labels is a judgment made by WHO leadership, and one that can reflect murky, tactical considerations. Regardless of what the WHO decides (and when), national governments—and individual states within the U.S.—have to make their own determinations about when and how to reopen their schools and loosen their restrictions on businesses. I reached out to prominent public-health experts to find out which epidemiological criteria ought to be met before these kinds of steps are taken.

The most obvious interpretation of "beating COVID-19" would be that transmission of the coronavirus has stopped, a scenario some public-health experts have hashtagged #ZeroCOVID. But the experts I spoke with all agreed that this won't happen in the U.S. in the foreseeable future. "This would require very high levels of vaccination coverage," said Celine Gounder, an infectious-disease specialist at NYU who served on Joe Biden's coronavirus task force during the transition. The U.S. may never reach vaccination rates of 75 to 85 percent, the experts said.

"The question is not when do we eliminate the virus in the country," said Paul Offit, the director of the Vaccine Education Center and an expert in virology and

immunology at the Children's Hospital of Philadelphia. Rather, it's when do we have the virus sufficiently under control? "We'll have a much, much lower case count, hospitalization count, death count," Offit said. "What is that number that people are comfortable with?" In his view, "the doors will open" when the country gets to fewer than 5,000 new cases a day, and fewer than 100 deaths.

That latter threshold, of 100 COVID-19 deaths a day, was repeated by other experts, following the logic that it approximates the nation's average death toll from influenza. In most recent years, the flu has killed 20,000 to 50,000 Americans annually, which averages out to 55 to 140 deaths a day, said Joseph Eisenberg, an epidemiologist at the University of Michigan. "This risk was largely considered acceptable by the public," Eisenberg said. Monica Gandhi, an infectious-disease specialist at UC San Francisco, made a similar calculation. "The end to the emergency portion of the pandemic in the United States should be heralded completely by the curtailing of severe illness, hospitalizations, and deaths from COVID-19," she said. "Fewer than 100 deaths a day—to mirror the typical mortality of influenza in the U.S. over a typical year—is an appropriate goal."

The "flu test" proposed here is not a perfect apples-to-apples comparison. Deaths attributed to COVID-19 are directly reported to public-health authorities, while the mortality numbers from seasonal flu are CDC estimates based on national surveillance data that have been fed into statistical models. But researchers believe that the straightforward counts of influenza deaths—just 3,448 to 15,620 in recent years—are substantially too low, while direct counts of COVID-19 deaths are likely to be more accurate. One big reason: Far more COVID-19 tests are done in a single day than flu tests in an entire year, and flu tests have a greater tendency to return false negatives.

In any case, we are nowhere near 100 COVID-19 deaths a day. Since last spring, states have not reported fewer than 474 deaths a day, as measured by a rolling seven-day average at the COVID Tracking Project at The Atlantic. Right now, the country as a whole is still reporting close to 2,000 deaths a day, and just two weeks ago that number was more than 3,000. So, if we're going by the flu test, we still have a very long way to go.

Some experts were even more conservative. Crystal Watson, a health-security scholar at Johns Hopkins University, suggested a threshold of 0.5 newly diagnosed cases per 100,000 people every day, and a test-positivity rate of less than 1 percent. That would translate to fewer than 2,000 cases a day in the U.S., compared with

the current 60,000 or more. We'd also want to log at least one month of normal hospital operations without staff or equipment shortages, she said.

While every proposed threshold remains far below what we're seeing right now, the researchers I spoke with believe that if vaccine uptake is high enough, those numbers can be reached. Watson suggested a target of 80 percent coverage for populations older than 65, and 70 to 80 percent for everyone else. For the latter, "perhaps 60 percent is more realistic," she said.

So far, no state has reached those vaccination levels in any population. It is possible, however, that in specific, high-risk subpopulations, targeted efforts could drive vaccination rates to very high levels. Our best example is in long-term-care facilities, which have been linked to 35 percent of total COVID-19 deaths in the U.S. The federal government's vaccine rollout made residents and staff in these facilities a priority and provided specific funds and operational help to vaccinate these people beginning in December. At the COVID Tracking Project, we've seen the share of deaths attributed to long-term-care facilities drop by more than half over the past six weeks, which suggests the vaccines are working.

The large number of Americans who've already been infected will also be crucial for reaching transmission-slowing levels of immunity. The CDC estimates that more than 83 million Americans have been infected with COVID-19, far more than the official, confirmed case total of 28 million. Forty-four million Americans have received at least one dose of a vaccine. Even assuming some overlap between the previously infected and the vaccinated, perhaps 100 to 120 million Americans have some level of immunity. That's roughly one-third of the population.

It could take months for the size of this group to reach a point where the number of COVID-19 deaths a day falls below 100. Until then, we'll be confronted with a different sort of risk: that, for some, the pandemic feels like it's over long before it actually is. Just as the country has never taken a unified approach to battling COVID-19, we may very well end up without a unified approach to deciding when it ends. That's why public-health experts are desperately urging Americans to hold firm even as the pandemic seems to be receding. "We're lifting mitigation measures too soon," warned Gounder, the infectious-disease specialist at NYU. "We're taking our foot off the brake before putting the car into park." If enough people ignore that message and decide the pandemic is over for them, it may very well put off the moment when we can say that the pandemic is over for everyone.