



Insight

Combatting COVID-19 After the Peak

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Abstract

- As the United States moves past peak health care resource use, policymakers must implement new policies that will provide a more sustainable control over the pandemic while allowing society to reopen.
- A recent proposal from the Margolis Center for Health Policy at Duke University outlines a national syndromic surveillance system that would combine widespread testing and high agency coordination to allow for the rapid identification of and response to new outbreaks.
- Such a surveillance system raises serious privacy concerns that policymakers must take into account through strict limitations on data use and sunset provisions.

Introduction

About a month into a global economic shutdown due to the coronavirus pandemic, things may finally be taking a turn for the better on the public health front. Recent [evidence](#) from New York City suggests their curve is flattening. Additionally, an Institute of Health Metric and Evaluation (IHME) [model](#) predicts that, nationally, peak health care resource use—a metric for [hospital burden](#)—occurred on April 11th, with individual states' resource use mostly peaking within 2 weeks on either side of that date. It seems that we are approaching the downswing of the first peak of COVID-19, which begs the question, what next?

While social distancing measures should continue in the hope that these health trends hold, there is a [parallel](#) concern about economic contraction, unemployment, and the collapse of entire industry sectors. The light at the end of the tunnel is the development of an effective vaccine with widespread administration to build herd immunity against COVID-19 and allow society to open fully again. Without such a vaccine, the pandemic will continue to persist. There are, though, measures that can be taken short of full-scale lockdown to attain a sufficient level of control over this disease to begin reopening some of the economy.

In an effort to detail these measures, experts from the Margolis Center for Health Policy at Duke University have proposed a [national COVID-19 syndromic surveillance system](#) that may serve as a bridge between early economic recovery and an effective vaccine. Having a robust tracking system may in fact be exactly what the United States needs to turn the tide against COVID-19. There are, however, serious privacy issues that arise out of such an expansive system that may require certain checks to appropriately limit its use.

Surveillance System Overview

The Margolis plan is split into four main capabilities, each of which requires coordination from local public health authorities all the way to the Centers for Disease Control and Prevention (CDC). Each capability builds on the others, with the first being a robust COVID-19 test and trace infrastructure. The plan moves next to integrating that infrastructure into a syndromic surveillance system that can keep tabs on hotspots for infection.

Once a serologic test is verified and operational, public health officials can then start screening for indicators of exposure and immunity, helping to clarify who is likely safe to return to work. Fortunately, the core infrastructure needed to establish this enhanced system is already present in national tracking of syndromes such as influenza.

1. *Test and Trace Infrastructure*

The ability to rapidly test both symptomatic individuals and those with a high risk of exposure such as health care workers serves as the critical foundation for the entire system. This process of tracking people based on suspected exposure is known as “[contact tracing](#).” Currently, most testing capacities are isolated to molecular tests using Polymerase-Chain Reaction, which means it may take days to receive results. The needed technology is a rapid point-of-care molecular test that can deliver results in under an hour, which fortunately seems to be [on the way](#). The goal is to get rapid diagnostic testing scaled up to around 750,000 individuals per week and then to use that data—transmitted freely and quickly between providers, local and state public health officials, the private sector, and the CDC and other federal entities—to establish a COVID-19 syndromic surveillance system.

2. *An Enhanced Syndromic Surveillance System*

Timely access to a wide range of health data from across the country—including universal hospital data on admissions, discharges, and transfers—will be crucial for the system to achieve necessary levels of monitoring. By integrating the test and trace infrastructure into a syndromic surveillance system, public health authorities will be able to better identify early signs of community outbreaks and help shift local resources more effectively.

3. *Developing Serologic Testing for Exposure and Immunity*

In addition to the syndromic surveillance system at the beginning, there is a need for widespread serologic testing. While molecular testing identifies the presence of absence of viral genetic code, a serologic test identifies the presence of antibodies, which indicate whether the body elicited an immune response to COVID-19 or another virus. Both molecular and serologic testing will build a better picture of asymptomatic cases and potential [immunity](#) from reinfection, expanding our understanding of the virus and identifying candidates who may be the first to be able to return to work safely, should immunity from a previous COVID-19 infection be sufficiently durable and complete.

4. *Rapid Response Capacity*

The final step is to use all of the data from the surveillance system and serologic testing to develop a capacity for rapid response through contact tracing, timely testing, then quarantining or otherwise isolating exposed individuals at a high level of granularity (i.e. the local and individual level). This final step will require high levels of contact and coordination between local, state, and federal public-health entities, including novel, sophisticated communication and querying platforms to expedite information sharing. The success of this capability will require the continuing engagement of the public in maintaining distancing practices, although the specific guidelines will undoubtedly change as a result of such a substantial surveillance system.

Privacy Concerns and Health Data

While the proposed system may be exactly what the United States needs to defeat the coronavirus—similar systems in other countries appear to have been effective—it raises serious privacy issues regarding an

individual's data. There are a couple of sides to this problem, and navigating the path forward requires facing some uncomfortable contradictions between the public's demand for maintaining civil liberties and ensuring the safety of the American people.

As the American Action Forum's Jennifer Huddleston remarks in her recent [insight](#), much of the needed data can be deidentified, aggregate data. This type of data is helpful to gauge the success of social distancing in communities and identify potential hotspots for disease among other uses. Unfortunately, to fully implement a syndromic surveillance system with the capacity for contact tracing, deidentified data is not enough. To track individuals and trace their exposure, the system would need to know who they are—and even more important, where they are—so officials can figure out who they may have exposed or been exposed to. The need for such information would directly encroach on the civil liberties guaranteed to American citizens, and this concern should not be dismissed.

Policymakers will need to balance the competing demands of the United States' legal codes and traditions with the public-health needs in such an atypical time. Prioritizing deidentified information wherever it is good enough—and only using more invasive data where absolutely necessary—seems an appropriate path for policymakers and experts to take. Furthermore, any legislation or regulations for such a system should limit the ways this personal data is utilized and set definitive end points for data collection. A trigger to terminate individual data collection once the president's public-health emergency is declared over, without exception, is one such solution. (For more on privacy issues during the COVID-19 pandemic, see Huddleston's work [here](#) and [here](#).)

Conclusion

The authors of the syndromic surveillance plan stress that while the surveillance system is very much needed for the current COVID-19 response, it will be needed even more for subsequent spikes or entirely novel outbreaks. Having the infrastructure in place not only for further battles with COVID-19, but also for all future outbreaks, would be a welcome relief to individuals and businesses as society navigates how to cope with global upheaval. Using these future protections, though, would have to be balanced to adequately attend to people's privacy, with triggers and strict limitations on when and how such a system could be used. The privacy concerns are serious, and having all-encompassing and unwavering restrictions in place will ensure privacy is maintained, attending to both the short- and long-term well-being of fellow citizens and the world at large.