

United States House of Representatives
Committee on Homeland Security

*“Confronting the Coronavirus: Perspectives on the Response to a
Pandemic Threat”*

Tom Inglesby, MD

Director, Center for Health Security

Johns Hopkins Bloomberg School of Public Health

March 4th, 2020

Chairman Thompson, Ranking Member Rogers, and members of the Committee, thank you for the chance to speak with you today about COVID-19 and the federal government’s response to it. My name is Tom Inglesby. I am the Director of the Center for Health Security of the Johns Hopkins Bloomberg School of Public Health and a Professor of Public Health and jointly in Medicine at Johns Hopkins University. The opinions expressed herein are my own and do not necessarily reflect the views of The Johns Hopkins University.

Our Center’s mission is to protect people’s health from major epidemics and disasters and build resilience. We study the organizations, systems, and tools needed to prepare and respond. Today, I will provide comments on the status of the COVID-19 pandemic and the US government’s response efforts. My testimony will provide recommendations regarding what I believe should be top priorities of the US government.¹

The COVID-19 pandemic presents the United States and the world with a serious health security threat. As such, it is critical that the US federal government continue to lead a robust response effort that supports state and local governments, public health agencies, healthcare systems,

¹ Please see <https://www.nytimes.com/2020/03/02/opinion/coronavirus-prepare-test.html> and <https://jamanetwork.com/journals/jama/fullarticle/2762690> which were the basis of a good portion of this testimony

industry, and the public in order to prevent the worst case outcomes in terms of health effects, economic damage, and societal impacts.

Epidemiological Update

As you know, coronavirus disease 2019 (COVID-19) was first recognized by astute clinicians in the Chinese city of Wuhan at the end of last year. As of March 3rd it had infected over 92,000 people and killed over 3100 across 65 countries.(2) On January 30th, the World Health Organization declared a Public Health Emergency of International Concern (PHEIC).(3)

Patients who become sick with COVID-19 most often present with a cough, fever, and in the more serious cases, an underlying viral pneumonia. In China, approximately 80% of those with illness developed mild symptoms, 15% require hospitalization and 5% became critically ill.(4) The virus has a 1-14 day incubation period, most often in the range of 5 days. We know that before China put in place its many efforts to slow the spread of the disease, each infected person infected between two and three others, an epidemiological parameter known as R0. That number will be different in different places and conditions over the course of the outbreak. The primary route of transmission is via respiratory droplets between persons at close contact (within 6 feet).

Some people who get infected have no symptoms – it will take time to understand the proportion of people who are infected that do develop illness as compared to those who do not. Tests called serology studies will need to be created for that, and the CDC and other labs are working to get those tests ready. There is some evidence that some people who are infected but do not develop symptoms can pass along their infection to others – a phenomenon referred to as asymptomatic transmission, which complicates public health’s ability to control the disease.(5) There are many uncertainties at this point, including how severe the disease will be in the US (it has a case fatality rate of about 2% in China), what percent of the population will be affected (also known as the attack rate), who develops severe disease, and how quickly it will spread in the face of public health interventions intended to slow it. In China the median age of the infected is about 51, and the case fatality rate increases with people in their 70s and 80s, and in those with pre-existing conditions.

As of March 3, the US has 100 recognized confirmed cases of COVID-19, including 6 death in 15 states. That number includes evacuees from the Diamond Princess cruise ship. The total includes returned travelers and their close contacts, as well as cases of people recognized in California and Washington state who do not appear to be related to those Americans who traveled in China or their close contacts. When a patient tests positive, and no known contacts

² https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200229-sitrep-40-covid-19.pdf?sfvrsn=7203e653_2

³ [https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov))

⁴ <https://jamanetwork.com/journals/jama/fullarticle/2762130>

⁵ <https://jamanetwork.com/journals/jama/fullarticle/2762510>

with previously identified cases are found, this mean that there is likely at least some level of transmission happening in those communities.

Public health laboratories have now been given the go ahead to begin using the CDC developed diagnostic test, and they are beginning to start testing patients around the county. We should now expect to see new cases confirmed in different states as diagnostic testing is expanded around the country this week. New cases confirmed in the next week or so could feasibly be in the hundreds and will likely continue to grow as more testing is performed.

U.S. Response Efforts

An emergency supplemental appropriation is currently being negotiated between the administration and Congress to fund the COVID-19 response. In terms of an appropriate funding level, comparisons to past infectious disease responses might be useful. In 2009, Congress appropriated \$7.7 billion for the H1N1 influenza pandemic, and in 2014, \$5.4 billion was appropriated for the Ebola response. Covid-19 will require perhaps twice as much money as Ebola or more. On February 28th, our Center sent a letter signed by 32 leading public health and healthcare organizations and individuals to the Chairs and Ranking Members of the House and Senate Appropriations Committees urging them to act swiftly to pass emergency supplemental funding sufficient for a comprehensive national and international response.

HHS will have major responsibilities for Covid-19. The CDC is leading the public health response, including the development, conduct, and promulgation of diagnostic testing; issuing technical guidance; and supporting federal, state, and local partners in screening and contact tracing. The NIH's National Institute for Allergy and Infectious Diseases (NIAID) is supporting medical countermeasure development, along with efforts at BARDA and FDA. The Assistant Secretary for Preparedness and Response (ASPR) is responsible for ensuring that the US healthcare system, including hospitals, EMS, healthcare supply chains, and others are well prepared and able to provide care.

DHS has responsibilities related to Customs and Border Patrol, working with CDC personnel to screen incoming travelers to the US, including assessing travelers who self-report illness and conducting fever screening at airports. Last weekend, the New York Times reported that 47,000 travelers have been screened at airports across the country.⁶ It is worth noting, though, that those efforts have yet to identify a confirmed case of COVID-19. The provision of educational messaging and materials at points of entry probably has had value in getting returned travelers to self-identify and bring themselves to medical and public health attention.

In addition, the National Biodefense Analysis and Countermeasures Center (NBACC) is conducting research intended to provide answers to some operationally relevant questions, including the stability of the SARS-COV-2 virus in different media and characterizing the best decontamination methods.

The Department of State has major responsibilities related to international agreements we have with other countries in terms of travel and trade, and it will need to navigate their

⁶ <https://www.nytimes.com/2020/02/29/health/coronavirus-preparation-united-states.html>

disruptions. The Department of Commerce too will be involved in that work, given the interruption of supply chains that have already emerged.

The Department of Defense will have responsibility for protecting the health of the military from COVID-19 and dealing with the operational implications of the epidemic and has had responsibilities for working with those persons who have been repatriated and kept on military bases.

Response Priorities

Health care systems should be planning to provide care for large numbers of critically ill patients. Measures that could be taken include the cancellation of elective surgeries if critical care demands rise to the point when ventilators or ICU space becomes limited, changing staffing patterns to accommodate for higher patient volumes in these units , and seeking additional ventilators from the national stockpile if necessary.

Health care institutions will also need very strong infection control strategies and responses. In China there have been thousands of health care workers infected, although it is unclear to what extent those infections occurred before HCWs were properly trained or whether they were properly equipped. To prevent that in the US there will need to be good administrative and engineering controls, and ready access to personal protective equipment by all staff that interact with patients. The manufacturers that make personal protective equipment should be assured by the federal government that they will be compensated for increasing their output to the maximum extent possible, even if hospitals do not end up needing all supplies that are produced.

In addition, readiness at other healthcare facilities will need to be strengthened. In China, there have been disruptions to dialysis centers and cancer clinics caused by Covid-19, and it will be important in the US for planning to ensure that routine medical and surgical care is not grossly disrupted by this disease.

In particular, it will be important to prevent infections in long term care facilities, given the risks faced by the elderly and those with pre-existing conditions, and the propensity for this disease to spread within closed systems, such as the Diamond Princess cruise ship, which had over 600 cases and in prisons in China, where they have been reported large outbreaks. We have already seen the consequences of this disease in a long-term care facility in Washington state where a number of people have died and a number of others are potential or confirmed cases.

Public Health agencies around the country will also play a pivotal role throughout the course of Covid19. They are now working to isolate suspected cases, and track and help ensure the isolation of high-risk contacts. If the numbers of cases increase significantly, it may not be possible to find and isolate all cases and contacts, any more than that is possible with seasonal influenza. At that point, public health agencies will need to focus on surveying the extent of COVID-19 in the larger population, advising how the public can be tested, and communicating

to the public about the importance of staying isolated when sick, including having positive cases stay home when not sick enough to be in the hospital.

Public health professionals will also need to work with political leaders to decide whether and under what conditions social distancing plans should be put in place – for example, whether large events should be cancelled, workers should telecommute, or schools should close. Public health agencies typically run on shoestring budgets and have no cash surpluses on hand. This work is expensive and will require some 24/7 work, all of which will need to be supported by federal and state governments.

Up until this week, the CDC has been doing all the lab testing for this virus which has limited the national capacity. Technical challenges have slowed the distribution of this test around the country, but 54 public health labs had the capacity to do testing as of March 3, with all of the more than 100 public health labs around the country being likely ready to start testing by the end of the week. Testing should ideally be available now for those who have a clinical picture consistent with coronavirus infection, but bandwidth limits on testing mean that for the immediate future we should be focusing on the sickest hospitalized patients who might have this disease.

Large scale testing will ultimately require clinical diagnostics companies to develop testing in the way that they have done for high throughput testing for other diseases. The federal government should make commitments to these companies that will ensure their development and manufacturing work will be fully compensated. These companies should not be wondering about the market size or if they will be left holding the bag for the costs of development. They should be working full speed ahead in making clinical diagnostics that can be used on large scale.

Medical countermeasure development

Leading vaccine scientists have said that in a good case scenario it will take 12 to 18 months to develop a vaccine against COVID-19. Even as all possible actions are being taken to develop a safe and effective vaccine in a highly funded federal government effort, the federal government and its industry partners should be planning to mass manufacture the vaccine when it is developed, ideally in multiple sites around the world. Vaccine will need to be made on large scale in a short period of time, and the developers of the successful vaccine(s) will have enormous pressure to share it around the world.

Antiviral or antibody-based medicines could be developed far sooner. Some candidate antiviral products are already in use or were developed for other purposes. It is too soon to say if they will be effective. There are a number of companies that are proposing to develop antibody based therapies. Such therapies, if able to diminish the morbidity and mortality of the very sickest patients could be very valuable. As with vaccines, the federal government should be strongly supporting the development and testing of a full range of candidate therapies, and it should be planning for the rapid and mass production of these therapies -- should they prove safe and effective.

Communication with the public

Given the quickly changing and complex daily developments around Covid-19, it will be important for the federal government to speak with a consistent voice. It will be important for the federal government on a daily basis to describe what is new, describe what new uncertainties or problems have developed, and explain what the federal government is doing in response. It is important that the White House is involved in coordinating the efforts of the various agencies of government involved in the Covid19 response. However, it should be HHS/CDC that are responsible for the daily public briefing, given their many overriding responsibilities in this public health emergency and their strong connections to the public health and health care organizations and leaders that are running the response locally around the country.

It is also important to say that the response to Covid19 will be stronger if it is nonpartisan and highly inclusive. Epidemics can result in division and in scapegoating. The country will get through this with less damage if we are all pulling in the same direction.

In conclusion, the United States has many tools at its disposal to slow and reduce the overall impact of COVID-19. What is needed now is to bring our substantial resources and expertise to bear quickly and decisively. Thank you for the opportunity to testify today, and I would be happy to answer your questions.