

Recommendations for the Coming COVID-19 Commission

By a Pandemic-Response Subgroup of Former Members of
President Obama’s Council of Advisors on Science and Technology

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Introduction

The United States confronted a succession of biological threats over the first two decades of the twenty-first century. These included the 2001 anthrax attacks, the 2002-2004 SARS coronavirus (SARS-CoV-1) pandemic, the 2009 H1N1 influenza pandemic, the 2012 MERS-CoV coronavirus epidemic in the Mideast, the 2014 Ebola outbreak in Africa, and the 2015-2016 mosquito-borne Zika virus epidemic in the Americas.

This pace of emerging disease outbreaks had been anticipated by leading microbiologists and epidemiologists in the late twentieth century.¹ In 2004, the National Intelligence Council in its report *Mapping the Global Future*, noted that “Some experts believe it is only a matter of time before a new pandemic appears, such as the 1918–1919 influenza virus ... Such a pandemic... would be devastating and could spread rapidly throughout the world.”² In 2008, a careful accounting catalogued the emergence of 335 infectious diseases into humans between 1940 and 2004.³ While a small number of these spread widely or even became established (for example, the HIV virus that causes AIDS), nearly all subsided quickly. But it was clear to microbiologists that the threat was ever-present, and likely increasing.

The executive branch first put a national strategy in place for pandemic disease outbreak surveillance and response with Presidential Decision Directive PDD NSTC-7, issued by President Clinton in 1996.⁴ Since then there has been a series of U.S. strategy documents related to biodefense, including defense against naturally occurring disease. Since 2001, the U.S. Government has spent billions of dollars annually to protect the country against both intentional biological attacks and emerging infectious diseases.⁵

Now the United States is in the midst of the COVID-19 pandemic, due to another emergent coronavirus, SARS-CoV-2. Despite decades of warning and strategy documents, and billions of

¹ Institute of Medicine, *Emerging Infections: Microbial Threats to Health in the United States* (Washington: National Academy Press, 1992); S. S. Morse, Ed., *Emerging Viruses* (New York: Oxford Univ. Press, 1993); J. Lederberg, “Infectious History,” *Science* 288, 14 April 2000, pp. 287-293.

² National Intelligence Council, *Mapping the Global Future: Report of the National Intelligence Council’s 2020 Project*, NIC 2004-13 (December 2004), p. 30.

³ Over 60% of these were zoonotic, i.e. of animal origin. K. E. Jones, N. G. Patel, M. A. Levy, A. Storeygard, D. Balk, J. L. Gittleman, and P. Daszak, “Global Trends in Emerging Infectious Diseases,” *Nature* 451 (21 February 2008), pp. 990-993; <https://www.nature.com/articles/nature06536> .

⁴ <https://clintonwhitehouse3.archives.gov/WH/EOP/OSTP/NSTC/html/pdd7.html> ; <https://fas.org/irp/offdocs/pdd/pdd-nstc-7.pdf>

⁵ See, e.g., Sell, T.K., Watson, M., “Federal Agency Biodefense Funding, FY2013-FY2014,” *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 2013 Sep, 11(3) p. 196–216.

dollars of funding, the United States has fared among the worst of all advanced nations that have faced the pandemic,⁶ with over 190,000 Americans dead as of mid-September 2020 and about a thousand more dying each day.⁷ Why and how has this happened? And how can the country ensure that it acts more effectively in future pandemics?⁸ Over the past months there have been proposals in the press and in Congress to create a commission to investigate and provide comprehensive answers to these questions.⁹ Here the Pandemic Response Subgroup of President Obama’s Council of Advisors on Science and Technology (OPCAST) makes comprehensive recommendations for the topics that should be examined by a COVID-19 commission.

Legislative Background

On July 1, 2020, Senators Diane Feinstein (D-CA), Amy Klobuchar (D-MN), and Bob Casey (D-PA) introduced legislation to create a ten-member bipartisan commission on the United States’ handling of the COVID-19 pandemic.¹⁰ The Senate legislation is similar to draft legislation introduced in the House of Representatives in April by Adam Schiff (D-CA).¹¹ The legislation calls for an examination of U.S. government preparedness prior to the pandemic, its response during it, and recommendations to improve the United States’ ability to respond and recover in future pandemics. The proposed Commission is explicitly modeled after the National Commission on Terrorist Attacks Upon the United States (the “9/11 Commission”).¹²

⁶ E. Yong, “How Did It Come to This? Why the Virus Won,” *The Atlantic*, September 2020, <https://www.theatlantic.com/magazine/archive/2020/09/coronavirus-american-failure/614191/>

⁷ Johns Hopkins University Coronavirus Resource Center, <https://coronavirus.jhu.edu>

⁸ These are questions that our OPCAST Pandemic-Response Subgroup, composed of former members of President Obama’s Council of Advisors on Science and Technology, has been asking over the course of the past several months. We have previously examined the federal stockpiles of medical equipment, methods for tracing contacts of infected individuals, management of pandemic-relevant public health care data, and testing. In all four settings, we have found systemic deficiencies and proposed remedies. Our reports on these topics may be accessed at <http://opcast.org>.

⁹ See, for example, Alex Ward, “The U.S. Needs a 9/11 Commission for the Coronavirus: A Former 9/11 Commission Member Explains Why,” *Vox*, April 3, 2020, <https://www.vox.com/2020/4/3/21206135/coronavirus-COVID-9-11-commission-trump-review>; John J. Farmer, Jr., “How To Get The Truth About the Pandemic: It Is Time for an Independent Commission on COVID-19,” *Foreign Affairs*, May 4, 2020; “Experts are Calling for a 9/11-Style Commission on U.S. Coronavirus Response. Here’s Where it Could Start,” *STAT*, June 29, 2020, <https://www.statnews.com/2020/06/29/us-needs-federal-commission-investigate-covid19-response-where-it-should-start/>; William Giannetti, “American Needs a 9/11-Type Commission to Investigate the Coronavirus Disaster,” *The National Interest*, July 5, 2020, <https://nationalinterest.org/feature/america-needs-911-type-commission-investigate-coronavirus-disaster-163811>; “We Must Learn the Lessons of the Pandemic. A Bipartisan Commission Can Help with That,” *The Washington Post*, August 18, 2020, https://www.washingtonpost.com/opinions/we-must-learn-the-lessons-of-the-pandemic-a-bipartisan-commission-can-help-with-that/2020/08/18/ff5767dc-8a34-11ea-ac8a-fe9b8088e101_story.html

¹⁰ S.4132 - National Commission on the COVID-19 Pandemic in the United States Act, introduced July 1, 2020, <https://www.congress.gov/bill/116th-congress/senate-bill/4132?s=1&r=19>.

¹¹ H.R.6548 - National Commission on the COVID-19 Pandemic in the United States Act, introduced April 17, 2020, <https://www.congress.gov/bill/116th-congress/house-bill/6548>.

¹² See Thomas H. Kean, Lee H. Hamilton, et al., *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States* (New York: W.W. Norton & Co., 2004); available at <https://9-11commission.gov/report/>

The COVID-19 Commission proposed in the legislation would:

- Be composed of ten members who are not current federal officials, with backgrounds including public health, epidemiology, emergency preparedness, armed services, and intelligence. Members would be chosen by Senate and House leaders, with the Chair chosen by the President;
- Have sufficient staffing and resources to complete the task thoroughly and quickly;
- Have subpoena power to compel cooperation by relevant witnesses;
- Not be required to comply with the Federal Advisory Committee Act (FACA);¹³
- Report to the American People, the Congress, and the President on the circumstances related to the outbreak in the United States, including preparedness as well as the intelligence and public health information available before the virus reached the United States, and to assess how federal, state, and local governments, as well as the private sector, responded to the crisis;
- Make specific recommendations to Congress and the Executive Branch on how to improve U.S. preparedness for future pandemic disease outbreaks;
- Be established in February 2021 and report in August 2022.

The legislation anticipates that the February start date would prove to be subsequent to the end of the pandemic. This prediction is likely to be overly optimistic, however.

The 9/11 Commission

The bullet list in the previous section giving the attributes of the COVID-19 Commission proposed in current legislation parallels the characteristics of the 9/11 Commission. A sense of the scale of that earlier effort is instructive in considering what would be appropriate for a COVID-19 Commission. With a \$15 million budget, the 9/11 Commission had 10 Commissioners and over 80 members of staff (some of whom held the security clearances necessary to review highly classified material), together with subpoena power, so was able to conduct extensive investigations.¹⁴ It interviewed over 1,200 people and reviewed millions of pages of documents. Although the Commission was not a FACA committee, it nevertheless held about a dozen sessions in which public testimony was given. Those who testified to the Commission, some in private and some publicly, included every relevant cabinet official of the Bush and Clinton administrations, as well as the President and Vice President of both administrations.¹⁵

¹³ In general, any advisory group established by a federal agency must comply with the 1972 Federal Advisory Committee Act (FACA), and must, among other requirements, hold open meetings that are announced in the *Federal Register* with sufficient advance notice. See <https://www.gsa.gov/policy-regulations/policy/federal-advisory-committee-management/advice-and-guidance/the-federal-advisory-committee-act-faca-brochure>

¹⁴ See “Frequently Asked Questions About the 9/11 Commission,” <https://govinfo.library.unt.edu/911/about/faq.htm-q9>. Even so, both of the Commission’s co-chairs alleged after the publication of the Commission’s report that the Commission had been misled by Department of Defense and Federal Aviation Administration officials. See Hope Yen, “Book: Sept. 11 Panel Doubtful Officials,” *The Washington Post*, August 4, 2006, <https://www.washingtonpost.com/wp-dyn/content/article/2006/08/04/AR2006080401026.html> .

¹⁵ The testimony of the then-former President (Clinton) and Vice President (Gore) was recorded. The COVID-19 Commission may wish to follow this precedent. See NBC News, “9/11 Commission Finishes Bush, Cheney Session,” updated April 4, 2004, <http://www.nbcnews.com/id/4862296#.X0-szi2ZPOQ> .

The 9/11 Commission was established in November 2002 and spent almost two years in its work, publishing its 567-page final report in August 2004. The report begins with the events of September 11th, describes the rise of Al Qaeda and previous attempts at grand terrorism, then describes efforts, and failures, by the United States executive and legislative branches to adapt to these new threats. There follows a sequence of chapters describing past antiterrorism efforts, Al Qaeda planning, and the failure to detect and circumvent the 9/11 plot. The report then analyzes government actions on 9/11 itself, before turning finally to recommendations for what should be done substantively and organizationally to prevent another such successful attack.

The Select Committee on Katrina

There is another extensive recent report analyzing the failure of the United States to adequately respond to a major threat and the resulting catastrophe: *A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*.¹⁶ Hurricane Katrina made landfall in New Orleans on the morning of August 29, 2005, leading to over 1,800 deaths and causing over \$100 billion worth of damage.

The House Select Bipartisan Committee had sixteen members and 34 members of staff, and it had subpoena power.¹⁷ The Select Committee was established by the House of Representatives on September 15, 2005, only two weeks after Katrina hit New Orleans. It delivered its final 364-page report to the full House in February 2006, a 5-month effort. It held nine hearings, “conducted scores of interviews and received dozens of briefings from local, state, and federal officials; non-governmental organizations; private companies and individuals who provided or offered external support after Katrina; and hurricane victims. The Select Committee also requested and received more than 500,000 pages of documents from a wide array of sources.”¹⁸

The Select Committee’s report provides an overview of the national framework for emergency management, examining the history of the Federal Emergency Management Agency (FEMA) beginning with its creation in 1979, the much later creation of the Department of Homeland Security (DHS), and the incorporation of FEMA into DHS. The complicated “push-pull” relationship between the federal government and the states for emergency preparation and management is discussed. and current federal, state, and local, as well as private, capabilities are summarized. The report then describes pre-landfall preparation, including lessons learned from previous hurricanes, and “Hurricane Pam,” a July 2004 FEMA-funded disaster simulation exercise in which a fictitious hurricane hit the New Orleans area. The report details failures of the exercise process and also a failure at state and local levels to address major problems identified by the simulation. It examines a series of critical infrastructure and planning issues and identifies failures of federal, state, and local actions on each of these topics.

¹⁶ <https://www.nrc.gov/docs/ML1209/ML12093A081.pdf>

¹⁷ House Minority Leader Nancy Pelosi had argued, without success, for an independent commission, rather than a select committee of the House of Representatives. See <https://pelosi.house.gov/news/press-releases/pelosi-statement-on-partisan-select-committee-on-katrina-response>

¹⁸ Select Committee report, p. 11.

Recommendations for COVID-19 Commission Structure and Focuses

The Congressional Research Service has usefully compared the characteristics of five proposed models for a COVID-19 Commission, albeit without making a recommendation.¹⁹ On the key question of the basic structure for the Commission, our OPCAST Pandemic-Response Subgroup favors an independent bipartisan commission (the 9/11 Commission model) over a select bipartisan congressional committee (the Katrina Commission model). The 9/11 Commission model provides a level of resources, dedicated members and staff, authority, independence, and credibility that the select congressional committee would be unlikely to be able to match. As with the 9/11 Commission, at least some members of the COVID-19 Commission should have the clearances necessary to read, and receive briefings on, highly classified intelligence.

Our recommendations for the topics that should be examined by the coming COVID-19 Commission follow; they move from broad background issues to specific questions regarding U.S. preparations and response.

Gleaning Insights from Previous Commissions

An early step in the Commission process likely will be interviews with 9/11 Commission members and staff for the purposes of hearing lessons learned from that experience and the Commissioners' insights into important issues to examine in the COVID investigation.²⁰ The 9/11 Commission framework provides a powerful structure for the COVID Commission, but many of the broad substantive issues raised by the House Select Committee investigating the Katrina catastrophe provide closer echoes to the COVID response: failure despite long-standing strategic warning and on-point previous experience; tardy exercise of federal authority; complicated relationships between the federal and state governments; and many others. It will therefore be equally important to interview Committee members and staff on the Katrina Select Committee, who may have insights that complement those serving on the 9/11 Commission.

The Threat of Emerging Infectious Diseases

Just as the 9/11 Commission examined the rise of Al Qaeda in order to go beyond merely proximate causes for the 9/11 attacks, so the COVID Commission should survey the causes and frequency of emerging zoonotic disease outbreaks, for which there is, of course, an extensive literature. Major outbreaks of the past two decades, and successes and shortcomings of the U.S. government response in these cases, should be examined, including avian influenza (e.g. H1N1), Ebola, Zika, and other coronavirus outbreaks (SARS, MERS).

Attention should be paid to whether there is a pattern of increased urgency and funding subsequent to an outbreak that is then not maintained, only to be followed by another burst of attention at the time of the next outbreak. If this pattern does in fact exist, the Commission

¹⁹ Congressional Research Service, "Proposals for a COVID-19 Congressional Advisory Commission: A Comparative Analysis," April 28, 2020, <https://fas.org/sgp/crs/misc/R46330.pdf>

²⁰ For the views of one 9/11 staff member, see John J. Farmer, Jr., "How To Get The Truth About the Pandemic: It Is Time for an Independent Commission on COVID-19," *Foreign Affairs*, May 4, 2020.

should consider mechanisms to mitigate this start/stop pattern of attention and resource commitment to what is clearly an ever-present threat.

Origins of SARS-CoV-2 and Strategic Warning²¹

The Commission should summarize the expert consensus, including disagreements and uncertainties, on the origin of SARS-CoV-2. Did the virus jump from an animal into the human population, leading to the Wuhan outbreak? Is there a credible possibility that the virus escaped from the Wuhan Institute of Virology, perhaps having been brought there after efforts to sample and track dangerous viruses in the wild? Is there any credible evidence that the virus was a human-engineered virus? There is value in definitively assessing and, as warranted by the evidence, supporting or rebutting these speculations.

When, or in what stages, did the United States receive warning of a novel coronavirus outbreak in Wuhan and indications of the level of threat it might pose? To what extent, if any, did the previous drawdown of CDC and/or other U.S. personnel in China affect the U.S. warning time? How did this information move through the United States government, and how and when did it reach the White House and the President?

How forthcoming and timely was China in providing information to the United States? Was there appropriate and timely communication among U.S. health, diplomatic, and other agency personnel?

The Role of the World Health Organization

The World Health Organization (WHO) has launched an independent review, the “Independent Panel for Pandemic Preparedness and Response,” of the international response to the COVID-19 pandemic.²² The Panel is to deliver an interim report in November 2020 and a complete report to the World Health Assembly in May 2021. The U.S. COVID-19 Commission should, of course, make use of this review, but nevertheless should conduct its own investigation into a number of long- and short-term questions about WHO’s role, as well as into issues that are unique to the United States.

Following the 2002-2004 SARS outbreak, the WHO’s International Health Regulations (IHRs), binding on 196 countries, were modified with the intention of improving global health security, including countries’ timely reporting of significant disease outbreaks and giving the WHO Director the authority and responsibility to declare a Public Health Emergency of International Concern (PHEIC) when necessary. The Commission should review the effectiveness of the IHRs in outbreaks subsequent to SARS and in the current pandemic, in particular, with special

²¹ Gentry and Gordon define “strategic warning” as the “communication to senior national decision-makers of the potential for, or actually impending, events of major significance to national interests and recommendations that leaders consider making policy decisions and/or taking actions to address the situations.” John A. Gentry and Joseph S. Gordon, *Strategic Warning Intelligence: History, Challenges, and Prospects* (Georgetown Univ. Press, 2019).

²² Helen Branswell, “WHO launches independent review of the international response to the COVID-19 pandemic,” *STAT* July 9, 2020.

attention to China's fulfillment of its IHR responsibilities and to WHO's timing of its PHEIC declaration.

The Commission should examine the role the United States has played in the WHO since the SARS outbreak and whether this role has been sufficiently effective or could have been improved. Among other issues in this connection, the Commission should inquire into the circumstance that the U.S. seat on WHO's executive board was left empty for more than two years and only filled in May 2020. What are the reasons for this absence, and did it have significant consequences?

In late May 2020, President Trump announced that the United States would end its membership in the WHO effective July 6, 2021, citing the WHO's handling of the pandemic. The Commission should understand the basis of this decision and consider whether it is in the interests of the United States. If the United States ultimately stays within the WHO, the Commission should consider recommendations for improving the WHO's performance in disease outbreak detection, notification, and response.

The Commission should also examine, specifically, WHO's ability to make decisions in the interest of global health even if those run against the wishes of powerful member states. De facto as well as de jure constraints on WHO decision-making should be considered.

Evolution of U.S. Infectious Disease Surveillance and Response Since PDD NSTC-7

As noted in the Introduction, above, the first U.S. national strategy for pandemic surveillance and response was Presidential Decision Directive PDD NSTC-7, issued by President Clinton in 1996.²³ The Commission should review this document and the subsequent succession of national studies of biodefense and assess, in that context, the adequacy of U.S. national pandemic planning prior to the COVID outbreak. Specific questions to be addressed should include:

Has the emphasis on preparations for bioterrorism or biological attack from a state adversary significantly detracted from preparedness for naturally occurring disease? At the same time, the country does not want to be in the position in a decade's time of suffering a bioengineered attack from an adversary and asking the exact opposite question. The Commission will wish to critically consider the optimal balance between defense against natural occurring disease and defense against biological attack, as well as dual-use approaches.

The incoming Trump Administration was provided with the National Security Council's 69-page "Playbook for Early Response to High-Consequence Emerging Infectious Disease Threats and Biological Incidents."²⁴ Why was the Playbook created by the Obama administration? How was it presented to the incoming Trump administration? What efforts were made to follow its prescriptions? Were the Playbook's prescriptions flawed or inadequate?

²⁴ Dan Diamond and Nahal Toosi, "Trump Administration Failed to Follow NSC's Pandemic Playbook, *Politico*, March 25, 2020, <https://www.politico.com/news/2020/03/25/trump-coronavirus-national-security-council-149285>

The Department of Defense established its Global Emerging Infections Surveillance program in 1997.²⁵ Did this program play a role in addressing some of the significant outbreaks of the past two decades, and is it appropriately funded and staffed to do so? The same questions should be asked of the Global Disease Detection Centers within the CDC's Global Disease Detection program.²⁶

The role of the Centers for Disease Control and Prevention (CDC) in international disease surveillance should be examined. Since 2017, more than 30 staff members have been pulled out of the CDC's office in China. In July 2019, the Administration ended funding for a U.S. epidemiologist embedded in China's equivalent to the CDC.²⁷ Why were these steps taken? Could these personnel have played a significant role in providing more warning to the United States about the origins or nature of the COVID outbreak in Wuhan? How many personnel does and should the CDC have in place in other countries, and how effective has been their role?

Executive Branch Structure, Preparedness, and Response

In May 2018, the White House disbanded the Directorate for Global Health Security and Biodefense, which had been created by the Obama Administration in 2015, within the National Security Council staff.²⁸ The head of the directorate left the Administration, while some members of the team were merged into other NSC directorates. How consequential was this reorganization with respect to the U.S. ability to anticipate and respond to the COVID pandemic?

The Commission should examine how decision-making and responsibility were apportioned during the COVID-19 pandemic among the various parts of the Department of Health and Human Security (HHS)--including the CDC, the Food and Drug Administration (FDA), the office of the Assistant Secretary for Preparedness and Response (ASPR), and the Secretary)--the Department of Homeland Security (DHS), the NSC staff, the OSTP staff, and formal and informal White House task forces. Were structures and lines of command in place to enable rapid but informed decision making? If not, what changes should be made?

More specifically, on January 29, 2020 President Trump announced the formation of the President's Coronavirus Task Force, to be chaired by HHS Secretary Azar and coordinated through the NSC. Twelve subject-matter experts from the White House and government agencies were appointed to the Task Force. On February 26, 2020 Vice President Pence was named to chair the task force, and Dr. Deborah Birx was named the response coordinator. The task force's mandate was to "lead the Administration's efforts to monitor, contain, and mitigate the spread of the virus, while ensuring that the American people have the most accurate and up-to-date health and travel information."²⁹

²⁵ <https://health.mil/Military-Health-Topics/Combat-Support/Armed-Forces-Health-Surveillance-Branch/Global-Emerging-Infections-Surveillance-and-Response>

²⁶ See: <https://www.cdc.gov/globalhealth/security/gdd.htm> .

²⁷ E. Yong, "How the Pandemic Defeated America," *The Atlantic*, September 2020.

²⁸ <https://www.reuters.com/article/uk-factcheck-trump-fired-pandemic-team/partly-false-claim-trump-fired-pandemic-response-team-in-2018-idUSKBN21C32M>

²⁹ Statement from the Press Secretary Regarding the President's Coronavirus Task Force, January 29, 2020, <https://www.whitehouse.gov/briefings-statements/statement-press-secretary-regarding-presidents-coronavirus-task-force/>

There were daily meetings and press briefings until late April. Since then, there have been infrequent press briefings and an unknown number of regular meetings. On May 5, five new members with expertise in the field of vaccines and getting Americans back to work safely were added to the Task Force. How effective was this group in the initial phases? Did its effectiveness change after the expansion and change of emphasis in May? Was there conflict between the White House and the participating agencies regarding decisions and public announcements? What would have made the task force more effective? In the early months, respected scientists participated actively in the briefings; their public roles at the briefings were diminished beginning in May. Why was this? What was the interaction of the task force with governors and mayors? Personal protective equipment (PPE) suppliers? Public health officials?

Special consideration should be given to the CDC, in view of the widespread perception that it was unable to provide strong Federal leadership for the nation's response to the COVID-19 pandemic³⁰. The evolution of the CDC since PDD NSTC-7 was issued should be documented, with particular attention to budgets, staffing, the quality of personnel and leadership, adequacy of information technology, capacity to collect and analyze data, and communications with public health organizations and the public.³¹

With respect to the Department of Homeland Security, a former DHS chief of staff has written that "Years of DHS planning for a pandemic threat have been largely wasted."³² The Commission should examine DHS pandemic planning and investigate this claim.

The invocation of the Defense Production Act (DPA), and its utility, should be investigated. Did invoking the DPA have significant impact, or if not, why? Could it have been more expansively and/or effectively employed?

The Strategic National Stockpile³³

The Commission should survey the history of the creation and maintenance of the Strategic National Stockpile (SNS). The SNS was depleted during the H1N1 epidemic in 2009. In March 2013, Congress enacted the Pandemic and All-Hazards Preparedness Reauthorization Act of 2013; Section 403 of the Act's Title IV "Reauthorizes the Strategic National Stockpile for

³⁰ E. Yong, "How Did It Come to This? Why the Virus Won," *The Atlantic*, September 2020; <https://www.theatlantic.com/magazine/archive/2020/09/coronavirus-american-failure/614191/>; Derek Watkins et al., "How the Virus Won," <https://www.nytimes.com/interactive/2020/us/coronavirus-spread.html?smid=nytcore-ios-share>; Alexis C. Madrigal and Robinson Meyer, "How Could the CDC Make that Mistake?" *The Atlantic*, May 2020, <https://www.theatlantic.com/health/archive/2020/05/cdc-and-states-are-misreporting-COVID-19-test-data-pennsylvania-georgia-texas/611935/>.

³¹ For a discussion of the evolution of the CDC's capacity with respect to public health data, see "Strengthening the Public Health Infrastructure: The Role of Data in Controlling the Spread of COVID-19," July 28, 2020, http://opcast.org/OPCAST_Public_Health_Data_Report_07-28-20.pdf.

³² Miles Taylor, "At Homeland Security, I Saw Firsthand How Dangerous Trump Is for America," https://www.washingtonpost.com/opinions/at-homeland-security-i-saw-firsthand-how-dangerous-trump-is-for-america/2020/08/17/f10bb92e-e0a3-11ea-b69b-64f7b0477ed4_story.html

³³ The OPCAST Subgroup has made its own recommendations regarding the SNS in "Recommendations for the National Strategic Pandemic-Response Stockpile," May 20, 2020, http://opcast.org/OPCAST_Ad_Hoc_Subgroup_Stockpile_Recommendations_05-20-20.pdf

FY2014-FY2018.”³⁴ One result of the failure to appropriate and carry out the funding and actions authorized in Public Law 113-5 (as well as the failure to renew the authorization beyond 2018) has been that the United States was unprepared for the supply needs of the Spring 2020 COVID-19 pandemic. Why did the authorization of PL 113-5 not lead to appropriations? Why was the authorization not renewed?

The responsibility for stockpile shortcomings is not the Federal government’s alone. According to Greg Burel, who was Director of the SNS from March 2007 to December 2019, SNS planning assumed that state stockpiles would also be in place, as they had been in the past. For the most part, however, those stockpiles were not replenished and maintained after the 2008 financial crisis.³⁵ The failure to replenish both the SNS and state stockpiles should be documented and understood, with lessons drawn for the readiness of the stockpiles in the future.

On October 1, 2018, the full responsibility for the SNS was transferred from CDC to the HHS ASPR.³⁶ This decision, and its impact on preparedness and response to the COVID pandemic, should be examined. In particular, whether this move coincided with a change in emphasis from preparedness for naturally occurring disease to preparedness for biological attack should be examined, and the consequences of this change understood.

The role that supply-chain issues have played in the replenishment of the stockpile should be examined. Why was adequate surge capacity not in place? Is the United States too dependent on foreign manufacturers for the items in its stockpile, and if so how can this vulnerability be mitigated? What role did, could, and should the Defense Production Act have played?

The Commission should examine efforts, reportedly sometimes chaotic and resulting in the waste of hundreds of millions of dollars,³⁷ to rebuild the stockpile subsequent to the start of the pandemic.

The mission statement of the SNS was changed on April 2, 2020, in the midst of pandemic-driven shortages of respirator masks and other equipment.³⁸ The Commission should investigate

³⁴ PUBLIC LAW 113-5—MAR. 13, 2013, <https://www.congress.gov/113/plaws/pub15/PLAW-113pub15.pdf>

³⁵ Melissa Quinn, “What You Need to Know About the Strategic National Stockpile,” CBS News, April 7, 2020, <https://www.cbsnews.com/news/q-a-with-greg-burel-former-director-of-the-strategic-national-stockpile/>.

³⁶ HHS FY19 PHSEF Justification of budget estimates for Appropriations Committee, pg. 3-5, 92, <https://www.hhs.gov/sites/default/files/fy-2019-phsef-cj.pdf>

³⁷ David J. Lynch et al., “Tactics of Fiery White House Trade Advisor Draw New Scrutiny as Some of His Pandemic Moves Unravel,” *The Washington Post*, September 2, 2020.

³⁸ Prior to April 2, 2020, the Office of the Assistant Secretary for Preparedness and Response described the mission of the SNS as follows: “Strategic National Stockpile is the nation’s largest supply of life-saving pharmaceuticals and medical supplies for use in a public health emergency severe enough to cause local supplies to run out. When state, local, tribal, and territorial responders request federal assistance to support their response efforts, the stockpile ensures that the right medicines and supplies get to those who need them most during an emergency. Organized for scalable response to a variety of public health threats, the repository contains enough supplies to respond to multiple large-scale emergencies simultaneously.” The new mission statement reads: “The Strategic National Stockpile’s role is to supplement state and local supplies during public health emergencies. Many states have products stockpiled, as well. The supplies, medicines, and devices for life-saving care contained in the stockpile can be used as a short-term

the reason for this change, and consider whether the new mission statement is an appropriate one for the SNS. If not, the Commission should present its recommendation for a modified or new mission statement, or for reverting to the previous one.

The SNS and other stockpiles are intended to serve not only pandemic response but the response to other emergencies, as well, such as hurricanes and wildfires. In autumn 2020, several states found themselves having to cope with those natural disasters simultaneously with the COVID-19 pandemic. The Commission should examine how prioritization is done with the SNS regarding preparing and responding to these different challenges, and whether any changes in the SNS, its management, or the deployment of its resources need to be made as a result of this examination.

Public Health Funding in the United States

The CDC and state and local jurisdictions have all been hampered for decades by underfunding.³⁹ In the shadow of the financial dominance of the medical-care system, as compared with spending on public health, and the congressional enthusiasm for the biomedical research mission of the NIH, public health has long been undervalued at both the national and the state level.⁴⁰ In addition, relatively little of the funding that is allocated for public health is used for infectious diseases.

In addition to the more obvious casualties of underfunding, there is reason for concern about neglect of such important questions as the influence, on disease propagation, of human behavior and the character and operation of residential, commercial, industrial, and transportation infrastructure.⁴¹ The Commission should examine whether there is adequate focus and appropriate responsibility for these matters anywhere in the public health system and, if not, how the inadequacies can best be remedied. Where should such work be done (universities, national labs, industry labs?), who should fund it (DOE? NSF?), and who should be responsible for overseeing its implementation (CDC?).

Recent years have seen public health budgets go from small to smaller, as parts of the public health mission became political targets in the context of a more general devaluing of scientific expertise.⁴² Federal funds, mostly from CDC and the Department of Agriculture (USDA), are the largest source of funding for state public health departments. The funding is almost always targeted to specific programs—particular diseases, maternal and child health, and food insecurity are examples. There is little core funding that might be used for infrastructure development or for

stopgap buffer when the immediate supply of adequate amounts of these materials may not be immediately available.” See <https://www.phe.gov/emergency/events/COVID19/SNS/Pages/default.aspx>

³⁹ Trust for America’s Health, *The Impact of Chronic Underfunding on America’s Public Health System: Trends, Risks, and Recommendations*, 2020, April 2020, <https://www.tfah.org/report-details/publichealthfunding2020/>

⁴⁰ Institute of Medicine. 2003. *The Future of the Public's Health in the 21st Century*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/10548>

⁴¹ As just one example, see Federation of European Heating, Ventilation, and Air Conditioning Associations, “REHVA COVID-19 Guidance Document,” August 3, 2020, https://www.rehva.eu/fileadmin/user_upload/REHVA_COVID-19_guidance_document_V3_03082020.pdf.

⁴² Michael D. Shear, “‘They Let Us Down’: 5 Takeaways on the C.D.C.’s Coronavirus Response”, *New York Times*, June 3, 2020, <https://www.nytimes.com/2020/06/03/us/cdc-virus-takeaways.html>

emergencies such as the COVID-19 pandemic.⁴³ It appears that funding by state governments, which typically comes from allocations from General Funds, has decreased at an even faster rate than Federal funding over the last decade.

As a result, the COVID-19 pandemic arrived in a United States whose public health infrastructure was already weakened. Local health departments have lost 55,000 jobs, a quarter of their workforce, since 2009.⁴⁴ The Commission should consider the effects of public health funding on the United States' ability to prepare for and respond to the COVID-19 pandemic. It should examine, specifically, the impacts of personnel and funding shortfalls on the CDC's preparation and response, as well as the impact that inadequate state and local public health personnel and budgets have had on the country's ability to cope with the COVID-19 pandemic. Its recommendations should address not only how to repair shortfall in particular agencies and jurisdictions, but also, more broadly, how to place public health in the United States on a more appropriate and stable footing.

Infrastructure for Public Health Data

The management of public health data needs to be a specific focus of Commission attention. As noted in the OPCAST Subgroup's recent report on data issues germane to this country's COVID-19 response,⁴⁵ traditional public health methodology for managing data is still often manual. As recently as March 2020, the President's Coronavirus Task Force was requesting spreadsheets of COVID-19 cases from hospitals by fax or email.⁴⁶ This reliance on antiquated data-entry and communication technology, along with imposition of burdensome clerical work on individual clinicians, is not how the United States should be retrieving such essential information in 2020.

Modern digital technology can provide a more complete, more timely, and less onerous approach. Modern data systems could allow immediate tracing of symptoms as people seek help in doctor's offices, retail clinics, or emergency departments. This sort of *syndromic surveillance* becomes possible when the information from clinical encounters now recorded in Electronic

⁴³ Funding for CDC's Public Health Emergency Preparedness (PHEP) cooperative agreements, which support core public health capabilities in states, territories, and local areas, has decreased from \$940 million in FY 2002 to \$675 million in FY 2020. The 2010 Affordable Care Act established the Prevention and Public Health Fund (PPHF) and funded it with a permanent appropriation that was to rise to \$2B per year in 2015 (Public Law No: 111-148. <https://www.govinfo.gov/content/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>). The Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96) reduced PPHF appropriations for FY2013 through FY2021 and the 21st Century Cures Act reduced PPHF appropriations for FY2018 through FY2024, each time diverting the appropriated funds for other purposes. The Fund reached \$1B in FY 2012 and again in FY 2020; it is not expected to reach \$2B until FY 2025. See NORC at the University of Chicago, *An Examination of Public Health Financing in the United States*, March 2013, prepared for the HHS Office of the Assistant Secretary for Planning and Evaluation (ASPE), <https://www.norc.org/PDFs/PH%20Financing%20Report%20-%20Final.pdf>

⁴⁴ Ed Yong, "How Did It Come to This? Why the Virus Won" *The Atlantic*, September 2020, p. 40.

⁴⁵ "Strengthening the Public Health Infrastructure: The Role of Data in Controlling the Spread of COVID-19," July 28, 2020, http://opcast.org/OPCAST_Public_Health_Data_Report_07-28-20.pdf

⁴⁶ The White House, "Text of a Letter from the Vice President to Hospital Administrators," March 29, 2020, <https://www.whitehouse.gov/briefings-statements/text-letter-vice-president-hospital-administrators/>; Daris Tahir, "Virus hunters rely on faxes, paper records as more states reopen," *Politico*, May 10, 2020, <https://www.politico.com/news/2020/05/10/coronavirus-health-records-245483>

Health Records (EHRs) is aggregated and automatically surveyed by regional, state, and national public-health offices. This kind of surveillance is not just possible in theory. As the OPCAST Subgroup’s data report cited above noted, while a National Syndromic Surveillance Program (NSSP) already exists, it does not directly use EHR data and is limited in what symptoms are reported.

Better systems are already used in other countries, including ten European nations that have comprehensive health-data systems.⁴⁷ The division of public-health data functions and responsibilities in the United States across federal, state, and local jurisdictions and across public and private entities poses particular challenges, however. States have a statutory responsibility for public health in their jurisdiction, but only the Federal government has the (potential) capacity to coordinate data and accelerate collection for national planning and response to emergencies.

Historically, CDC has been the central federal agency responsible for this role. Even with the shortcomings described above, and the tensions attendant on managing relations with hospitals and state and local authorities, the CDC has until recently been the acknowledged national leader in the science of population health, respected globally, and a major source of both expertise and reliable data.⁴⁸ On July 10, 2020, however, the White House announced a plan to have hospitals bypass CDC and send all COVID-19 patient information to a central database in Washington daily, still mostly by manual means,⁴⁹ with the database to be managed by a private contractor.

Reaction to this move in the public health community has been largely critical. It was argued that the change placed an additional burden on hospitals, that it politicized data collection, that it weakened CDC, and that it risked withholding information from the public.⁵⁰ At the time of this writing, it appears that data responsibility has been transferred back to CDC. But the proposal and the furor underscore the need for the careful consideration, by the Commission, of the structural arrangements for management of public health data in this country. What was the rationale for the Administration’s initial switch from CDC? Have CDC’s powers and capacities with respect to data collection been significantly weakened in recent years, and, if so, was that a factor in motivating the change? Is some other form of major restructuring of responsibilities the

⁴⁷ Guerrisi et al., “Participatory Syndromic Surveillance of Influenza in Europe,” *The Journal of Infectious Diseases*, Volume 214, Issue suppl_4, December 2016, Pages S386–S392, <https://doi.org/10.1093/infdis/jiw280>

⁴⁸ Charles Duhigg, “Seattle’s Leaders Let Scientists Take the Lead. New York’s Did Not,” *The New Yorker*, April 26, 2020, <https://www.newyorker.com/magazine/2020/05/04/seattles-leaders-let-scientists-take-the-lead-new-yorks-did-not>

⁴⁹ <https://www.hhs.gov/sites/default/files/COVID-19-faqs-hospitals-hospital-laboratory-acute-care-facility-data-reporting.pdf>

⁵⁰ Sheryl Gay Stolberg, “Trump Administration Strips C.D.C. of Control of Coronavirus Data”, *New York Times*, July 14, 2020, <https://nyti.ms/309Xtsi>; Amy Goldstein and Lena H. Sun, “Hospital officials, experts say new federal rules for COVID-19 reporting will add burdens during pandemic,” *The Washington Post*, July 15, 2020; <https://www.washingtonpost.com/health/2020/07/15/coronavirus-trump-administration-data-change/>; Thomas M. File, Jr., “Response from IDSA President to New COVID-19 Data Reporting Protocol,” <https://www.idsociety.org/news--publications-new/articles/2020/response-from-idsa-president-to-new-COVID-19-data-reporting-protocol/>

answer, or would it to be preferable to build up (rebuild?) CDC's data management capabilities and clarify procedures for its interactions with hospitals and state and local authorities?

Testing for the Coronavirus

Tests that detect the novel coronavirus SARS-CoV-2 have been a critical element in the response to the current pandemic, and the use, availability, cost, and reliability of these tests have been hotly debated.⁵¹ These topics and related issues will be important subjects for investigation by a COVID-19 commission.

Tests for virus are used for at least three purposes: to make a definitive diagnosis of patients with symptoms of COVID-19; to ascertain whether persons who were in contact with diagnosed individuals are infected; and to screen selected groups of asymptomatic people for virus to prevent them from infecting others. The outcomes of testing in all three categories will be important matters for any commission to study.

Many entities---Federal, state, and local governments, and many private institutions and companies--- have participated in the development, regulation, use, and interpretation of these tests. Historically, at the federal level, the National Institutes of Health (NIH) has been expected to perform the biomedical research that provides much of the fundamental knowledge required to produce such tests for this and other diseases, whereas the commercial sector has been responsible for designing, manufacturing, and supplying a variety of versions of the tests to be employed in a disease-specific fashion. The FDA has had responsibility for evaluating and approving new tests, and the CDC has been assigned the tasks of guiding the use of the tests and reporting and analyzing the results, in conjunction with state and local public health authorities.

In view of the country's failure to control the COVID-19 pandemic more rapidly, the Commission should determine whether the powers and budgetary resources provided to the NIH, the CDC, and the FDA by the Federal government were sufficient for them to carry out their responsibilities in this national public health emergency and whether the authorities, funds, and responsibilities need to be adjusted to be better able to confront future pandemics.

It has been widely noted that long-term advances in basic science, especially in genomics and chemistry, have helped to develop tests for the new coronavirus with appropriate combinations of cost, speed in delivering results, sensitivity, accuracy, and amenability to high-volume production and use. Nevertheless, shortages of tests, inconsistent directions about their use, high costs, and restrictions on reimbursement for some purposes were observed to have been impediments to effective use of viral tests during the pandemic.

⁵¹ The OPCAST Subgroup has made its own recommendations regarding testing in "Testing for the Pathogen During the COVID-19 Pandemic and Future Ones," August 18, 2020, http://opcast.org/OPCAST_Testing%20Report_08-18-20.pdf

The failures of the CDC to facilitate testing early in the pandemic and to guide the use of available tests later in the pandemic have been well documented,⁵² but the Commission should provide a definitive history of what went wrong, and what factors may account for the lax laboratory standards that were evident during the early phase. In addition: Why and how was a decision made to reject internationally available tests? Could this decision have been reversed when problems with the CDC-produced tests became clear, and would it have made a difference at that point if it had been? If so, why was the decision not reversed?

The standards by which the Food and Drug Administration (FDA) accords Emergency Use Authorizations for tests should also be re-examined to determine whether such authorization is being allocated too readily (e.g. for the many polymerase chain reaction -based tests for viral RNA⁵³) or too slowly (e.g. for the newer, faster tests for viral antigen that may be held to an inappropriately high standard for sensitivity⁵⁴). Does the FDA need additional protection against politicization?

Contact Tracing

An essential element in the control of infectious diseases is the identification and tracing of the contacts of infected individuals, testing the contacts for the infectious agent, and quarantining of any who prove to be infected, until the infection is resolved. Many reports have alleged that the United States was poorly prepared to perform such contact tracing and that those deficiencies had a significant role in prolonging and failing to control the pandemic.⁵⁵ The Commission should consider the basis and accuracy of these allegations. Was the United States sufficiently prepared to perform contact tracing in conjunction with diagnostic testing to slow the spread of SARS-CoV-2? How and where should contact tracing be conducted and who should be responsible for organizing such efforts? Should the Federal government establish a unit for testing and contact tracing in one of the agencies of the Department of Health and Human Services (HHS).

Travel Bans

In the early stages of the pandemic, in an effort to reduce the number of infected individuals in the United States, the White House announced three travel bans, prohibiting travelers from entering the United States from China on January 31, 2020, from Europe on March 11, 2020, and from the United Kingdom on March 14. U.S. citizens were exempt. No requirements for

⁵² “The Unique U.S. Failure to Control the Virus,” <https://www.nytimes.com/2020/08/06/us/united-states-failure-coronavirus.html?smid=nytcore-ios-share>; “Lessons Unlearned: Four years before the CDC fumbled coronavirus testing, the agency made some of the same mistakes with Zika,” https://www.washingtonpost.com/investigations/lessons-unlearned-four-years-before-the-cdc-fumbled-coronavirus-testing-the-agency-made-some-of-the-same-mistakes-with-zika/2020/07/03/c32ca530-a8af-11ea-94d2-d7bc43b26bf9_story.html?utm_campaign=wp_post_most

⁵³ <https://www.fda.gov/medical-devices/coronavirus-disease-2019-COVID-19-emergency-use-authorizations-medical-devices/vitro-diagnostics-euas>

⁵⁴ <https://www.fda.gov/news-events/press-announcements/coronavirus-COVID-19-update-fda-posts-new-template-home-and-over-counter-diagnostic-tests-use-non>

⁵⁵ See, e.g., “The Role of Contact Tracing in the Control of Microbial Epidemics, Including COVID-19,” June 18, 2020, http://opcast.org/OPCAST_On_Contact_Tracing_06-18-20.pdf

quarantine upon entry were imposed. The Commission should examine both the decision-making that led up to these bans and the public health effects of the bans themselves. Who made the decisions and on what basis? Were the bans effective in slowing the spread of COVID to or within the United States?

No travel restrictions were imposed within this country, although eventually some states required that visitors from other states needed to subject themselves to quarantine for as long as two weeks after arrival. Would interstate travel bans have made a difference? What lessons can be drawn for the use of travel bans in future outbreaks? Is there a role, and would it be constitutional, for U.S. states to impose travel bans affecting residents from other states? Could such bans be more effective than quarantining people entering states from elsewhere?

Providing Accurate Information to Health-Care Workers and the Public

Traditionally, the CDC has been assigned the authority to provide guidance to the states, localities, and the general public about many aspects of infectious diseases. The Commission should examine the consistency, adequacy, and consequences of announcements regarding COVID-19 issued by the CDC and by other components of federal and state governments. This examination should include guidance on mask use by the public, tests for the coronavirus and for the serological responses to it; prevention and treatment strategies; the timeliness of warnings concerning foreign travel and cruise ship vacations; and information regarding social distancing and lockdown. Particular attention should be paid to situations in which public health guidance changed during the pandemic; how well were such changes communicated to avoid confusion and loss of trust?

The role and effects of social media with respect to the spread of information, misinformation, and conspiracy theories regarding the pandemic should be examined. The Commission should consider producing a classified annex on the role of any Russian or other foreign nations' misinformation campaigns targeted at the U.S. government, news programs, or the public.

On August 22, 2020, the President of the United States tweeted that “The deep state, or whoever, over at the FDA is making it very difficult for drug companies to get people in order to test the vaccines and therapeutics. Obviously, they are hoping to delay the answer until after November 3rd.” This tweeted accusation was disputed by the FDA Commissioner.⁵⁶ The Commission should investigate whether there is any evidence that the FDA intentionally delayed the development of vaccines or therapeutics in order to influence the November 2020 election.

Therapies for COVID-19

Scientists in the United States and many other countries became engaged in searches for effective therapies for COVID-19 very quickly after the disease was first described, and they were helped by the growth of knowledge about new therapies against the human immunodeficiency virus (HIV), hepatitis C virus (HCV), and other viral pathogens. New

⁵⁶ Jeff Mason, “Exclusive: FDA Commissioner Disputes Trump, Says No ‘Deep State’ Thwarting Vaccine,” *Reuters* August 24, 2020, <https://www.reuters.com/article/us-health-coronavirus-usa-hahn-exclusive/exclusive-fda-commissioner-disputes-trump-says-no-deep-state-thwarting-vaccine-idUSKBN25L0A2> .

methods for screening and evaluating new compounds and drugs previously approved by the FDA for other purposes were harnessed in massive, collaborative efforts to find effective treatments for COVID-19. And work was quickly initiated to determine whether antibodies against SARS-CoV-2—either those found in plasma from convalescent patients or those developed as mono-clonal antibodies in the laboratory—might provide benefit to severely ill patients.

Nevertheless, more than six months into the pandemic, no highly effective treatments have become available. One repurposed drug approved for other infections, remdesivir, received an Emergency Use Authorization (EUA) from the FDA based on evidence that it shortens the length of hospitalization. On the other hand, an initial EUA for hydroxychloroquine was rescinded, and some early, potentially promising results with convalescent plasma formed the basis for a controversial ruling by the FDA on its effectiveness.

The COVID-19 Commission should take a close look at the several aspects of the search for therapies during the pandemic. Was the research effort well-organized and monitored by the federal government? Did the FDA make sensible decisions about the issuance of EUAs? Were the components of the U.S. health care system properly informed about available therapies? In particular, U.S. government decision-making and public pronouncements regarding hydroxychloroquine, remdesivir, and convalescent plasma should be examined in detail.

Vaccines

From the first days of the pandemic, it was widely recognized that an effective vaccine could bring the situation under control, assuming public acceptance. Although experience with the development of vaccines against other coronaviruses was very limited, and despite the long timeline to approval of novel vaccines in the past (generally more than four years), the U.S. government quickly established a research initiative (Operation Warp Speed) and provided financial incentives to private industries in hopes of accelerating the development, testing, and production of a vaccine against SARS-CoV-2 at an unprecedented pace. From the outset, it was evident that progress in genomics, virology, gene therapy, and immunology was affecting the design of novel vaccines and that one or more effective vaccines might be available for widespread use in unprecedented time.

While the outcome is not yet known, it is certain that efforts in the United States and elsewhere to speed the development, testing, and distribution of a vaccine should be examined by a COVID-19 Commission, with lessons drawn for both future outbreaks as well as ongoing vaccine production under non-crisis conditions. Special attention should be given to the usefulness of the research collaborations organized by the federal government, to the effects of government subsidies and advance purchases of vaccines that had yet to be tested, and to the plans for phased distribution of vaccines in the United States, as well as plans to work with other agencies, including the World Health Organization (WHO), to distribute vaccines throughout the world.

On September 1, 2020, the Trump Administration announced that it would not be part of a global effort to develop and distribute a SARS COVID-19 vaccine, reportedly in part because of the

involvement of the WHO in that effort.⁵⁷ The Commission should examine why this decision was made, assess whether it did or did not affect the timing and availability of a COVID-19 vaccine in the United States, and assess whether there were any significant international consequences of this decision.

State and Local Decision-Making

The Commission should perform a critical comparison and assessment of the variety of state and local responses to the pandemic, especially with respect to key public health decisions. Numerous approaches short of complete lockdowns were imposed at different times by various states and localities, such as quarantines, temperature-taking on entry to buildings, limiting crowd size, requirements for masks and social distancing, and the closing (and re-opening) of schools, bars, movie theaters, and so on. To the extent possible, the Commission should evaluate the relative success of these different approaches and seek to identify best practices.

Disparate Demographic Impacts of the Epidemic in the United States

By mid-June 2020, 40% of deaths due to SARS-CoV-2 in the United States had taken place in nursing homes and long-term care facilities.⁵⁸ The Commission should examine whether federal and state officials could have better protected the elderly, as well as staff, in these facilities. Lessons learned could be propagated prior to future pandemics. Similar questions should be asked about front-line workers in hospitals, essential workers in other professions, and prison staff and inmates.

The COVID-19 epidemic has had disparate demographic impacts in addition to the heavy toll on the elderly. As of August 2020, Black Americans had been twice as likely to die from COVID-19 than White or Asian Americans, for example.⁵⁹ Indigenous people were also especially hard hit. Adjusting the data for age differences among different ethnic groups make the disparities even more severe. The Commission should present the most recent reliable final or near-final data on these disparities, probe the reasons for them, and offer suggestions about what governmental entities should be responsible for tracking these differential impacts and seeking to minimize them in the future.

Lessons Learned from Other Countries

There were disparate experiences with the pandemic in other technically advanced countries, though nearly all were more effective in their response than was the United States. The Commission should survey and contrast approaches taken by China, South Korea, Australia, Canada, and a variety of European countries, particularly the United Kingdom, Germany, Italy

⁵⁷ Emily Rauhala and Yasmeen Abutaleb, “U.S. Says it Won’t Join WHO-Linked Effort to Develop, Distribute Coronavirus Vaccine,” *The Washington Post*, September 1, 2020, https://www.washingtonpost.com/world/coronavirus-vaccine-trump/2020/09/01/b44b42be-e965-11ea-bf44-0d31c85838a5_story.html?hpid=hp_hp-banner-low_whovaccine-252pm%3Ahomepage%2Fstory-ans

⁵⁸ Ed Yong, “How Did It Come to This?” *The Atlantic*, September 2020, p. 38.

⁵⁹ APM Research Lab, “The Color of Coronavirus: COVID-19 Deaths by Race and Ethnicity in the U.S.,” August 18, 2020, <https://www.apmresearchlab.org/covid/deaths-by-race> .

and Sweden. Why were the number of cases in Italy so much larger than those in its neighbors? How and to what extent did these countries reopen successfully?

Conclusions

After the terrorist attacks of September 11, 2001, Congress established the 9/11 Commission to examine U.S. preparedness and response to the catastrophe. After the 2005 Katrina catastrophe, the House of Representatives created a Select Committee with an analogous mandate. The hope was that such examinations would make catastrophe less likely in future disasters. By mid-September 2020, sixty times more Americans have already died from the COVID-19 pandemic than died in the 9/11 attacks. A bipartisan (or better, non-partisan) COVID-19 Commission to examine federal, state, and private sector preparedness and response, and to recommend ways to prevent such a catastrophe from happening again, is clearly needed.

Here the OPCAST Pandemic Response Group has tried to lay out systematically the many questions that a future COVID-19 Commission should examine. The scope is necessarily broad, as was true for the 9/11 Commission. There will always be disease outbreaks, and the pace at which infectious agents emerge from animal hosts into the human population seems likely to increase in the coming decades. Preventing these events from becoming catastrophes must be the goal.

The Ad Hoc Group

The authors are a subset of the members of President Obama's Council of Advisors on Science and Technology (OPCAST) who were involved in producing the six reports dealing with issues related to viral pandemics that his PCAST delivered between 2009 and 2016. In alphabetical order, the members of the Subgroup are:

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The authors have contributed to this effort as individuals working on their own time, not as representatives of their institutions. The effort has no sponsors and no budget.

The six reports relevant to pandemics that were issued by the Obama PCAST are:

U.S. Preparations for 2009-H1N1 Influenza, 88 pp, August 2009
<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/pcast-h1n1-report-final2.pdf>

Reengineering the Influenza Vaccine Production Enterprise to Meet the Challenges of Pandemic Influenza, 87 pp, August 2010
<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST-Influenza-Vaccinology-Report.pdf>

Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans: The Path Forward, 108 pp, December 2010
<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/pcast-health-it-report.pdf>

Propelling Innovation in Drug Discovery, Development, and Evaluation, 110 pp, September 2012
<https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/pcast-fda-final.pdf>

Better Health Care and Lower Costs: Accelerating Improvement through Systems Engineering, 66 pp, May 2014
https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_biodense_letter_report_final.pdf

Preparing for Biological Threats, 18 pp, November 2016
https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_biodense_letter_report_final.pdf

The five reports issued by the Ad Hoc Group to date—addressing pandemic stockpiles, testing, contact tracing, data issues in pandemic management, and tasks for a COVID-19 Commission—have drawn on these Obama PCAST studies and research and observations since. They can all be found at <http://opcast.org/>. In the coming weeks and months, the Ad Hoc Group may issue additional reports on other aspects of responding to COVID19 and future pandemics.