



CENTER ON NATIONAL SECURITY AT FORDHAM LAW

Project on Biosecurity

REPORT #1

COVID-19 Detection and Response:

The United States, China, South Korea,
The United Kingdom, Germany, and New Zealand

March – August 2020



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Director's Introduction

The Center on National Security is pleased to present its first issue of *The Biosecurity Project Report #1: COVID-19 Detection and Response*. The COVID-19 pandemic has devastated populations worldwide, disrupted daily life and social interaction, and plunged economies into recession, while exacerbating conflicts globally. The impact extends far beyond public health to the security and stability of the nation-state and the international community.

Our new project on biosecurity examines initial responses to COVID-19 through the lens of national security and effective governance, with the goal of identifying some initial factors that can help produce an effective response to the early stages of pandemic.

The overriding question for our research is: *Why did certain countries perform better in their initial response to COVID-19 while others performed worse?* Our findings suggest that, while many individual factors are important to successfully combating the virus, it is a combination of best practices that is essential. Without employing several of these factors simultaneously, poor outcomes seem unavoidable.

This report, the first in a series, examines national responses to COVID-19 in six countries from March through August 2020: the United States, the United Kingdom, Germany, South Korea, New Zealand, and China. We reviewed prior legislation, existing governance and pandemic preparedness plans, and how leaders of these countries countered the spread of the pandemic. We focused our analysis on the responses of top officials and major national security institutions – including defense ministries, intelligence and law enforcement agencies, and emergency response departments.

Our key findings are as follows:

A country's form of government—whether democratic or authoritarian, federal or centralized—does not matter in terms of success and failure in countering the early stages of COVID-19.

Societal factors—such as culture and trust in government—play a critical role in pandemic response. Governments should account for such factors when designing and implementing response and deterrence policies. Leaders and policies that fail to engage populations in a way that produces a constructive, *whole of nation* response will fail to counter the virus effectively.

Only adherence to a specific set of factors—discussed in this report—leads to a successful pandemic response. No single factor, or even several in tandem, are sufficient to turn the tide of COVID-19's spread.

All told, our findings, detailed in the report that follows, suggest that the remedies for future pandemics are accessible. Legislation, proactive pandemic response teams, immediate

deployment of those plans at the domestic and international level, and above all, responsible leaders presiding over those tools, will lead to a future scenario where pandemics can be stopped in their early stages.

Karen J. Greenberg
Director, Center on National Security
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Executive Summary

This report, the first installment in a series on governance and COVID-19, examines the experiences of six countries in confronting the early stages of the COVID-19 pandemic: the United States, the United Kingdom, Germany, South Korea, New Zealand, and China. COVID-19 is a novel respiratory illness that is believed to have originated in Wuhan, China, in late 2019. It spread rapidly across the globe and, by August 2020, had infected more than 19 million people and killed over 724,000, in 188 countries and regions.²

Researchers at CNS examined the successes and failures of these countries in countering COVID-19, compared their preparedness regimes, as well as the in-time responses of each government, to assess which governance-related factors are the most critical to early success at the domestic level. The report recognizes two quantifiable variables as metrics for success: a country's total number of deaths per 100,000 people, and the percentage of positive cases per total number of tests, as of August 8.³ **These measures result in the following ranking order for combating COVID-19, from least successful to most successful responses: the United States, with the least effective response; followed by the United Kingdom; Germany; South Korea; and New Zealand, with the most effective response.**⁴ Though China's reported mortality rate is the lowest of all six countries at 0.34 deaths per 100,000 people, China does not report the daily number of tests performed. We are therefore unable to confidently rank its response based on these two criteria, but this paper will nonetheless review the merits and drawbacks of China's domestic response.

As the director's introduction states, two overriding conclusions emerged through our research into how these six countries handled infectious disease outbreaks prior to COVID-19 and their policies taken in response to the current pandemic. First, **governance structure**—whether a country is democratic or authoritarian, federal or centralized—**does not have a significant impact** on the success of an initial pandemic response. Second, **no one factor by itself determines success** in combating COVID-19. Instead, we found that **four factors proved to be necessary in successfully countering the spread of the pandemic.**

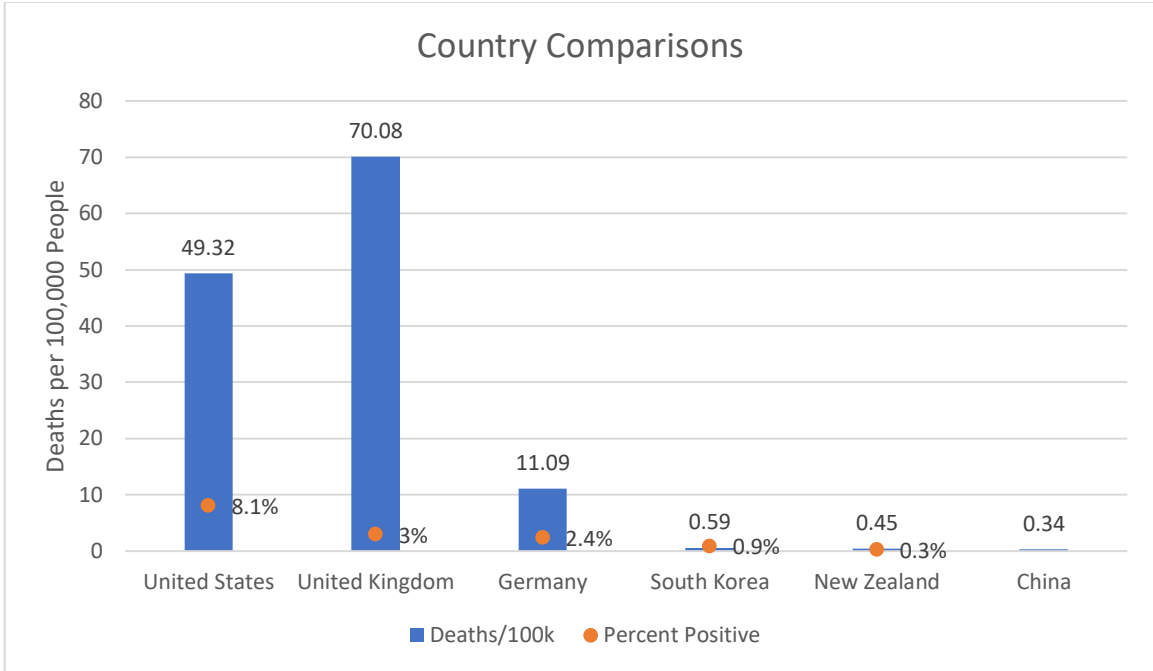
² "COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)," Johns Hopkins University. Accessed August 8, 2020. Available from <https://coronavirus.jhu.edu/map.html>.

³ "Mortality Analyses," Johns Hopkins University. Accessed August 8, 2020. Available from <https://coronavirus.jhu.edu/data/mortality>; "Share of total COVID-19 tests that were positive, Aug 7, 2020," Our World in Data. Available from <https://ourworldindata.org/grapher/covid-19-positive-rate-bar?tab=chart&country=NZL~USA~GBR~DEU~KOR>.

⁴ The number of deaths per 100,000 and the percent positive tests for each country as of August 8, respectively, are as follows: 1) New Zealand, 0.45 deaths and 0.3 percent; 2) South Korea, 0.59 deaths and 0.9 percent; 3) Germany, 11.09 deaths and 2.4 percent; 4) the United Kingdom, 70.08 deaths and 3 percent; and 5) United States, 49.32 deaths and 8.1 percent. While the United Kingdom has about 21 more deaths per 100,000 people than the United States, the United States has 5 percent more positive tests than the United Kingdom. Given that the United States' percent positive has been increasing after an initial decline in the first few months of the pandemic while the United Kingdom's rate has decreased over time, we have ranked the United States last for failing to test adequately and maintain progress.

- 1) **Strong central leadership and interagency coordination.** Though it may be the case that a national strategy exists and the medical community is prepared, these factors do not matter absent a decisive leader and effective government coordination.
- 2) **An adaptable, pre-existing pandemic strategy and implementation plan.** Existing strategies and implementation plans provide governments with a starting point for handling novel outbreaks, even though adaption will likely be necessary.
- 3) **Regard for societal and cultural factors** that can help or hinder the national response. Pandemics demand a *whole of nation* response, in contrast to other national security concerns, which often require a *whole of government* response.
 - a. Government should work closely with partners in the private sector, including hospitals, tech, and the hospitality industry, as well as with the general public.
 - b. Individualistic societies likely require higher trust in government authority to succeed in pandemic response compared to communally-oriented societies.
- 4) **A strict lockdown and/or effective data-driven measures.** Smart implementation of either of these containment approaches is necessary to result in a successful response to COVID-19. Leaders that accurately gauged which mitigative measures would be most acceptable among their citizens have outperformed those that did not.

These findings are based on a predominantly qualitative analysis. Though we do utilize two quantitative variables to measure the effectiveness of a response, we do not attempt to quantify the largely subjective factors listed above. Instead, through case study summaries and timelines, we seek to demonstrate how these governance factors contributed to the effectiveness of a country's initial response to COVID-19. Moving forward, these hypotheses will be tested as the project grows and new countries are added.



Note on Sources

This project relies primarily on university research data and government sources, including government websites and state-run media outlets, for information about each country's response to COVID-19.

To measure a country's number of deaths per 100,000 people, we utilize data from the Johns Hopkins University Coronavirus Resource Center.⁵ Our data on the number of positive cases per total number of tests comes from Our World in Data, a collaboration between researchers at the University of Oxford and the Global Change Data lab.⁶

It is important to note at the outset that reporting on the number of deaths, cases, and tests is more reliable for certain countries than for others. This data may be unreliable due to underreporting, different methods of reporting data on a country-by-country basis, and a variety of other factors. Furthermore, there is likely varying degrees of underreporting deaths in nearly all countries. This has occurred for a variety of reasons, including suppressing the number of deaths by pressuring healthcare providers, as well as different standards on what is counted as a COVID-19 death, which can result in a higher number of deaths reported for diseases with similar symptoms, such as pneumonia.⁷ Nonetheless, the data cited in this report is seen as the most reliable at this time and is widely cited across academia, government, and the news media.

⁵ "Mortality Analyses," Johns Hopkins University. Accessed August 8, 2020. Available from <https://coronavirus.jhu.edu/data/mortality>.

⁶ "Share of total COVID-19 tests that were positive, Aug 7, 2020," Our World in Data. Available from <https://ourworldindata.org/grapher/covid-19-positive-rate-bar?tab=chart&country=DEU~USA~GBR~KOR~NZL>.

⁷ "Technical Notes: Provisional Death Counts for Coronavirus Disease (COVID-19)," Centers for Disease Control and Prevention. May 13, 2020. Available from https://www.cdc.gov/nchs/nvss/vsrr/COVID19/tech_notes.htm#:~:text=Deaths%20due%20to%20COVID%2D,19%2Drelated%20mortality; Chris Buckley and Paul Mozer, "A New Martyr Puts a Face on China's Deepening Coronavirus Crisis," The New York Times. February 7, 2020. Available from <https://www.nytimes.com/2020/02/07/world/asia/china-coronavirus-doctor-death.html>.

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UNITED STATES

The United States performed poorly in its efforts to control the initial spread of COVID-19. As of August 2020, the United States was among the top ten countries with the highest mortality rates worldwide, with 49.32 deaths per 100,000 people, and the second highest among the five countries examined in this study. The absence of a clearly defined national strategy, combined with the reality of critical societal factors – including a highly individualistic culture and low trust in government authority – have contributed to over 162,000 deaths and 5 million cases as of August 8.⁸ Percent positive cases reached a peak of 24 percent on April 3 and decreased to a low of 3.8 percent on June 12, before rising again over six percentage points to 8.1 percent on August 8.⁹ This rising percent positive rate reflects outbreaks in the United States in early June 2020, when the country began to reopen, and a failure to perform adequate testing to detect the full number of cases.^{10,11}

The United States has a limited history of epidemics within its borders, and therefore was unable to rely on previous experience in dealing with an epidemic that rises to pandemic proportions. While outbreaks of SARS, H1N1, MERS, and Ebola over the past two decades have forced the federal government to pass new legislation and reevaluate and reform its pandemic response strategy, the U.S. government was largely unprepared for a pandemic of this magnitude to strike the homeland.

The Trump administration's failure to consider early warnings from the Intelligence Community, as well as President Trump's decision to dismantle the National Security Council's Global Health Security and Biodefense unit in 2018, exacerbated many existing weaknesses in preparedness.

The Trump administration also chose to disregard existing pandemic strategy left by the previous administration. However, it is possible that had President Trump followed this strategy, the United States still would have lacked the interagency coordination mechanisms required to execute an effective federal response to a pandemic as infectious and stealthy as COVID-19, given that the response strategy and system had never been tested with a pandemic of this scale. In embarking on its own strategy, however, rather than adapting the existing one to the novel situation, the Trump administration lost valuable time, not to mention the trust of citizens.

⁸ "Public Trust in Government: 1958-2019," Pew Research Center. April 11, 2019. Available from <https://www.pewresearch.org/politics/2019/04/11/public-trust-in-government-1958-2019/>.

⁹ "US Historical Data," The COVID Tracking Project. August 8, 2020. Available from <https://covidtracking.com/data/us-daily>.

¹⁰ Manny Fernandez and Sarah Mervosh, "Texas Pauses Reopening as Virus Cases Soar Across the South and West," *The New York Times*. June 25, 2020. Available from <https://www.nytimes.com/2020/06/25/us/texas-coronavirus-cases-reopening-Greg-Abbott.html>.

¹¹ The WHO has suggested a positive test rate lower than 10 percent – preferably lower than 3 percent – as a general benchmark of adequate testing. Source: [World Health Organization](#)

Lack of trust in government and the politicization of the virus represent two critical societal factors that impeded the nation's early response. A defiant individualism also stymied progress, largely where local leaders, echoing the president, refused to introduce mandatory measures to curtail the spread of the virus. As we observed in states like Texas and Florida, infections rose dramatically as citizens intentionally flouted medical guidelines and spread conspiracy theories—a problem that countries with community-minded populations did not face. It is likely that, had the Trump administration not downplayed the threat when the virus first appeared in the United States, these societal factors would have been far less significant.

Despite state-level successes in sharing medical equipment and organizing regional lockdown policies, federal failures to secure effective tests and personal protective equipment further caused the United States to fall behind in the early response. Meanwhile, countries like South Korea were able to put in place effective containment policies in January and early February of 2020.

In order to meet the demands of future pandemics, the United States will need strong leadership, interagency cooperation, and strategic competence. As a populous country with global ties, a diverse citizenry, and individualistic culture, the United States needs leadership that focuses on unifying the nation around a common strategy and implementation plan. Collaboration across government agencies, as well as between states, will be essential to success in this regard. Reviving the National Security Council's Global Health Security and Biodefense unit would likely prove a beneficial first step, particularly when paired with the creation or reform of other interagency cooperation mechanisms. However, even with such structural improvements, future strategic planning would benefit from taking into account Americans' general lack of trust in government authority, increasing transparency, and prioritizing public communication.

The United States' Biosecurity Timeline

Since 2000, the U.S. Intelligence Community has recognized infectious diseases as a major threat to U.S. national security, exacerbated by increasing globalization. The Bush and Obama administrations dealt with multiple public health emergencies, including SARS, H1N1, MERS, and Ebola, leading them to pass legislation and establish offices across the federal government to improve infectious disease management. The Pentagon has been involved throughout, conducting overseas missions to assist with epidemic responses and partaking in global efforts to develop cures for diseases like SARS. However, much of this structure was abandoned in the lead up to COVID-19. The U.S. resistance to interagency collaboration, its closure of agencies and positions designed to combat pandemics, and its failure to tap into existing systems becomes evident on the timeline from late November 2019 until the writing of this report in August 2020.

2000

January 30: The National Intelligence Council publishes a new National Intelligence Estimate on the threat from global infectious diseases, which examines the most lethal infectious diseases globally and by region, as well as national and international capacities to deal with them. It assesses how diseases that originate internationally pose a threat to the United States.

Source: [Director of National Intelligence](#)

2002

June 12: President Bush signs the Public Health Security and Bioterrorism Preparedness and Response Act, which eliminates the need to convene an advisory committee to amend the list of diseases. The act also clarifies that federal isolation and quarantine measures apply not just to infected persons, but also to persons who have been exposed to a communicable disease and may potentially become infectious.

Source: [NCBI](#)

2003

April 4: In response to the SARS epidemic, the Department of Defense (DoD) announces that personnel may make only mission essential trips to China and Hong Kong.

Source: [Department of Defense](#)

April 10: The DoD advises military and civilians traveling in East Asia to take precautions against SARS. There are no reported cases of SARS in the DoD.

Source: [Department of Defense](#)

April 29: The Pentagon reports that SARS has had a negligible impact on the U.S. military.

Source: [Department of Defense](#)

May 29: At the request of the Centers for Disease Control and Prevention (CDC), a team of 20 scientists at the U.S. Army Medical Research Institute of Infectious Diseases in Florida begins working on a cure for SARS.

Source: [Department of Defense](#)

2004

December: The Defense Science Board Task Force on SARS Quarantine provides an interim report on quarantining guidance for dealing with the SARS epidemic, after having met on three occasions from 2003-2004. The report notes that “appropriate quarantine and isolation procedures occur within a spectrum and need not be perfect to have a salutary effect on an epidemic,” while acknowledging that “the costs of an extensive quarantine are very high.”

Source: [Homeland Security Digital Library](#)

2005

November 2005: The Homeland Security Council publishes the National Strategy for Pandemic Influenza.

Source: [Centers for Disease Control and Prevention](#)

2006

May: The Homeland Security Council releases its Implementation Plan for the National Strategy on Pandemic Influenza. The three pillars of this strategy are 1) preparedness and communication; 2) surveillance and detection; and 3) response and containment. The strategy details stages for a federal government response to a pandemic based on the World Health Organization’s phases and alert levels, including goals, actions, and policy decisions.

Source: [Centers for Disease Control and Prevention](#)

August: The Pentagon issues the Department of Defense Implementation Plan for Pandemic Influenza, which provides strategic guidance to all DoD components. It addresses the provision of DoD assistance to civil authorities, both foreign and domestic.

Source: [Homeland Security Digital Library](#)

2009

April 15-17: The first and second human infections with the novel H1N1 virus are detected in California on April 15 and April 17.

Source: [Centers for Disease Control and Prevention](#)

April 18: The CDC first reports the confirmed H1N1 cases to the WHO through the U.S. International Health Regulations Program.

Source: [Centers for Disease Control and Prevention](#)

April 21-22: The CDC first publicly reports the first two cases of the novel H1N1, and begins to develop a candidate vaccine against the virus. It activates its Emergency Operations Center.

Source: [Centers for Disease Control and Prevention](#)

April 25: The WHO declares a public health emergency of international concern.

Source: [Centers for Disease Control and Prevention](#)

April 26: The Department of Health and Human Services (HHS) declares H1N1 to be a public health emergency. The National Center for Medical Intelligence (NCMI) publishes an intelligence report predicting that H1N1 will become a pandemic.

Source: [National Center for Medical Intelligence](#)

April 29: The WHO raises the level of influenza pandemic alert from phase 4 to phase 5, signaling that a pandemic was imminent, and requests that all countries immediately activate their pandemic preparedness plans and remain on high alert for outbreaks.

Source: [Centers for Disease Control and Prevention](#)

May/June: H1N1 summer activity peaks in the United States.

Source: [Centers for Disease Control and Prevention](#)

June 11: The WHO declares a pandemic and raises the worldwide pandemic alert level to phase 6, indicating the virus is spreading to other parts of the world.

Source: [Centers for Disease Control and Prevention](#)

June 22: Congress approves a \$7.65 billion pandemic influenza response package. HHS and CDC receive the majority of the funding, but \$350 million is allocated to boost state and local response readiness. The funds are to be used to expand surveillance, increase federal stockpiles of drugs and medical supplies, and develop, buy, and administer vaccines.

Source: [Center for Infectious Disease Research and Policy](#)

July 24-25: The Secretary of HHS renews the public health emergency declaration. The CDC estimates that at least 1 million cases have occurred in the United States.

Source: [The White House](#)

October 1: The HHS Secretary renews the declaration of H1N1 as a public health emergency for a second time.

Source: [The White House](#)

October 23: President Obama declares the H1N1 Influenza pandemic a National Emergency, allowing the HHS Secretary to utilize Section 1135 of the Social Security Act, which allows the Secretary to temporarily waive or modify certain requirements of the Medicare, Medicaid, and State Children's Health Insurance programs and of the Health Insurance Portability and Accountability Act Privacy Rule throughout the duration of the public health emergency.

Source: [The White House](#)

November 12: The CDC releases its first official estimates of H1N1 cases, hospitalizations, and deaths—seven months after the first reported case.

Source: [Centers for Disease Control and Prevention](#)

2010

August 11: The WHO declares the end of the H1N1 pandemic.

Source: [Centers for Disease Control and Prevention](#)

2012

May: HHS publishes an H1N1 Influenza Improvement Plan, which includes sections on the following priorities: detection and characterization of influenza viruses; community mitigation measures; medical surge capacity; medical countermeasures for influenza other than vaccines; vaccine manufacturing, distribution, and post-distribution; communications; cross-cutting preparedness issues; and international partnerships and capacity-building activities.

Source: [U.S. Department of Health and Human Services](#)

2014

February: The Global Health Security Agenda is launched as an international initiative to prevent, detect, and respond to biothreats. The initiative began in 2013, when the National Security Council convened an interagency meeting with the Departments of State, Defense, Agriculture, HHS, as well as the Federal Drug Administration, the Agency for International Development, and the CDC. This meeting was followed by engagement with other countries, international organizations, and the non-governmental sector.

Source: [Brookings](#), [GHSA](#), [The White House](#)

May 12: A Pentagon-funded lab in Egypt detects the earliest known cases of Middle East Respiratory Syndrome (MERS). The lab shared samples with the CDC for the development of tests for the virus.

Source: [Department of Defense](#)

August 5: The Pentagon establishes an Ebola Task Force. Plans for civil infectious response were incomplete, because the DoD's traditional focus was the health protection of its own military forces. DoD had not developed policies and guidance for combating a disease that infected a foreign civilian population. The Chairman of the Joint Chiefs of Staff recommended that DoD support: 1) be limited to DoD unique activities; and 2) not include direct patient care. Both redlines became policy.

Source: [Joint and Coalition Operational Analysis](#)

September 16: President Obama announces a major increase in the U.S. response to the Ebola epidemic in West Africa, including the establishment of a military command center in

Monrovia, Liberia, to support civilian efforts across the region. The United States has deployed to the region more than 100 specialists from the interagency, including the Departments of State, HHS, Defense, and the CDC and USAID.

Source: [Department of Defense](#)

October 23: The National Geospatial-Intelligence Agency (NGA) grants access to unclassified geospatial intelligence tools to the public domain. This data will allow users to see Ebola cases by province and the locations of emergency treatment units, said an IWG-R3 analyst. Users can determine from the data distances between transportation hubs, like airports, and the closest emergency treatment units.

Source: [National Geospatial-Intelligence Agency](#)

November 17: Congress approves DoD's use of up to \$750 million of reprogrammed funds to assist Ebola aid efforts.

Source: [Congressional Research Service](#)

2015

March: The Pentagon begins its transition to Operation Onward Liberty, which will involve a small group of DoD personnel traveling to Liberia no later than April 30. They plan to build partnership capacity with the Armed Forces of Liberia, continue military engagement to "support Liberia's growth toward enduring peace and security," and begin obligating the \$112 million to develop Ebola vaccines and therapeutics.

Source: [Department of Defense](#)

Under the direction of National Security Adviser Susan Rice, the Obama Administration establishes the Directorate for Global Health Security and Biodefense under the National Security Council. It is dedicated to detection and preparedness, serving as the "smoke alarm" to warn of the first signs of a public health emergency before it grows worse.

Source: [Time](#), [Reuters](#)

2016

February 17: U.S. Army scientists begin the first MERS vaccine clinical trial. The Pentagon recognizes the possibility of MERS infiltrating military personnel in the Middle East.

Source: [Department of Defense](#)

December 2016: The Pandemic Prediction and Forecasting Science and Technology Working Group of the National Science and Technology Council publishes "Towards Epidemic Prediction: Federal efforts and Opportunities in Outbreak Modeling."

Source: [Obama White House Archives](#)

2017

Early 2017: The Obama Administration leaves the incoming Trump Administration with the NSC pandemic response playbook, which coordinates and delegates tasks in responding to the spread of infectious diseases across agencies.

Source: [Politico](#), [PBS News](#), [NSC Pandemic Playbook](#)

June: An updated version of the Pandemic Influenza Plans is released. This plan is a modernized approach to tackling pandemics, featuring interagency cooperation and coordination with the global public health community.

Source: [Centers for Disease Control and Prevention](#)

December: The White House issues a National Security Strategy that identifies the threat of pandemics and describes an action plan for addressing biothreats with three priorities: 1) detect and contain biothreats at their source; 2) support biomedical innovation; and 3) improve national emergency response.

Source: [National Security Strategy](#)

2018

January 19: The U.S. Embassy in Beijing begins sending science diplomats to the Wuhan Institute of Virology, with the last visit taking place on March 27. The delegation reportedly sent two diplomatic cables to Washington, the first of which on January 19 warns of the lab's work on bat coronaviruses and the potential risk of a new SARS-like pandemic impacting humans. No action is reportedly taken by the State Department.

Source: [Washington Post](#)

February 21: The U.S. National Science Foundation closes its three foreign offices, including the office in Beijing. Previously, the National Science Foundation had coordinated with the U.S. Agency for International Development in a program to help China monitor and respond to outbreaks. Throughout 2018, the U.S. Department of Agriculture transfers the manager of an animal disease monitoring program out of China. Other staffing cuts included a trainer from the Centers for Disease Control and Prevention, who had been based in China and trained field epidemiologists. 33 out of 47 positions at the CDC agency office in Beijing were cut.

Source: [National Science Foundation](#), [Reuters](#)

May: President Trump dismantles the Global Health Security and Biodefense unit of the National Security Council, which was responsible for pandemic forecasting and planning.

Source: [Associated Press](#)

2019

January - August: HHS conducts a pandemic simulation, "Crimson Contagion," that raises concerns in the Intelligence community that the federal government's response is

underfunded and that interagency roles and responsibilities are not clearly defined or understood.

Source: [HHS Crimson Contagion Findings](#), [New York Times](#)

July 25: A MERS-CoV vaccine is safe and induces strong immunity in an Army-led, first human clinical trial.

Source: [Walter Reed Army Institute of Research](#)

November: The Defense Department's National Center for Medical Intelligence (NCMI) reportedly distributes a "situation report" to some federal public health officials, which contains raw intelligence suggesting that an infectious disease is affecting China's Wuhan region.

Source: [ABC News](#), [NBC News](#)

December: The NCMI raw intelligence reporting from November leads to formal, analytic assessments written in December, which are reportedly briefed multiple times over the month of December to the White House, Joint Chiefs of Staff, and the Defense Intelligence Agency, according to sources familiar with the briefings.

Source: [ABC News](#)

December 31: Robert Redfield, Director of the Centers for Disease Control and Prevention, learns of a "cluster of 27 cases of pneumonia of unknown etiology reported in Wuhan, China," according to the press secretary for the Department of Health and Human Services, Katherine McKeogh. Soon after, the CDC makes three U.S. direct hires, a deputy director on temporary deployment to China, plus ten local employees to support CDC staff in China.

Source: [Washington Post](#)

2020

Early January: A detailed assessment of the national security threat posed by the novel coronavirus is reportedly first included in the President's Daily Brief, and warnings from the Intelligence Community to the White House continue from through the month of January into early February.

Source: [Washington Post](#), [ABC News](#)

January 2: CDC Director Dr. Robert Redfield contacts the National Security Council about a potential novel coronavirus in China.

Source: [Politico](#)

January 3-4: Redfield speaks with George Gao, Director of the Chinese Center for Disease Control and Prevention. He follows up with an email offering "CDC technical experts in laboratory and epidemiology of respiratory infections to assist you and China CDC in identification of this unknown and possibly novel pathogen."

Source: [Washington Post](#)

January 6: Redfield sends another email to Gao with a formal letter offering CDC support to China's CDC. The U.S. CDC issues a "Watch Level 1 Alert" for Wuhan, advising travelers to avoid animals, animal markets, and animal products.

Source: [Washington Post](#), [Congressional Research Service](#)

January 11: After the first death is officially reported in China on January 11, a policy committee within the NSC's Counterproliferation and Biodefense Directorate begins meeting almost daily. From mid-January to early March, more than 50 meetings and calls with NSC committees and the coronavirus task force are held.

Source: [Politico](#)

January 15: The Trump administration signs an interim trade agreement with China.

Source: [Washington Post](#)

January 17: The CDC dispatches 100 employees to three U.S. airports in New York (JFK), San Francisco (SFO), and Los Angeles (LAX) to screen travelers who had been in Wuhan. By mid-January, about 4,000 people have reportedly already entered the United States directly from Wuhan, according to VariFlight, an aviation data company based in China.

Source: [New York Times](#), [New York Times](#)

January 18: HHS Secretary Alex Azar speaks with President Trump about the novel coronavirus for the first time.

Source: [Washington Post](#)

January 20: In Washington state, a man develops symptoms of COVID-19 after returning from a trip to Wuhan, China, on January 15. State and local health officials notify the CDC Emergency Operations Center, which then tests the man, finding him to be the first confirmed case of COVID-19 in the United States.

Source: [New England Journal of Medicine](#)

January 23: National Security Adviser Robert O'Brien briefs President Trump for the first time on the domestic threat posed by the novel coronavirus.

The State Department orders the mandatory departure of non-emergency U.S. personnel and family members from the U.S. consulate in Wuhan, China.

Source: [Congressional Research Service](#)

January 24: The State Department raises its travel alert for Hubei Province to Level 4, "Do not travel," its highest alert level.

Source: [U.S. Department of State](#)

January 27: White House aides reportedly meet with the former acting Chief of Staff Mick Mulvaney, in an effort to garner more attention from senior officials to the virus. Mulvaney then begins convening more regular meetings. The CDC issues its highest-level travel notice, Level 3, advising that travelers avoid nonessential travel to China. The State Department

raises its advisory for China to Level 3 of 4, while retaining its Level 4 advisory for Hubei Province.

Source: [Washington Post](#), [Congressional Research Service](#)

January 27-28: HHS Secretary Alex Azar reiterates the January 6 offer from the CDC when speaking with China's health minister on January 27. The WHO repeats Azar's offer to China on January 28.

Source: [Washington Post](#)

January 29: Peter Navarro, Director of the Office of Trade and Manufacturing Policy at the White House, writes a memo to President Trump, in which he states: "There is an increasing probability of a full-blown COVID-19 pandemic that could infect as many as 100 million Americans, with a loss of life of as many as 1-2 million souls."

195 Americans are evacuated from Wuhan and land at a military base in Southern California. The United States is the first country to evacuate citizens from Wuhan. The State Department plans to organize four more evacuation flights from Wuhan before the end of February.

Source: [CNN](#), [New York Times](#), [U.S. Department of State](#)

January 30: The WHO declares the coronavirus a public health emergency of international concern. HHS Secretary Alex Azar, Dr. Robert Redfield, and Dr. Anthony Fauci agree on a travel ban for those coming from China.

Source: [New York Times](#), [New York Times](#)

January 31: The Trump Administration suspends entry into the United States of foreign nationals who have travelled to China within the past 14 days, effective two days later on February 2, with 11 exceptions. U.S. citizens can still travel from China, but were subject to screening and possible 14-day quarantine. However, flights continue for weeks into the United States at airlines' discretion. By the end of January, about 381,000 passengers have arrived directly from China at 17 U.S. airports, according to U.S. Department of Commerce data.

HHS Secretary Alex Azar declares a public health emergency for the United States.

Source: [The White House](#), [New York Times](#), [New York Times](#), [Congressional Research Service](#)

February 2: The entry restrictions on foreign nationals who have travelled to China within the past 14 days come into effect.

Source: [The White House](#)

February 7: The Pentagon mandates that all DoD components identify all service members returning from mainland China and place them under a 14-day quarantine.

Source: [Office of the Under Secretary of Defense](#)

Mid-February: The coronavirus reportedly begins to circulate in New York City, weeks before the first confirmed case in the city. Based on genome sequences, travelers likely brought the virus mainly from Europe, rather than Asia, according to research by the Icahn School of Medicine at Mount Sinai and a separate team at the NYU Grossman School of Medicine.

Source: [New York Times](#)

February 17: Americans stranded in Japan on the Diamond Princess cruise ship begin returning home, but are temporarily prevented from making port

Source: [New York Times](#)

February 16: American public health experts arrive in China with a United Nations team, along with specialists from Germany, Japan, Nigeria, Singapore, and South Korea. They visit Beijing, Wuhan, as well as Guangdong and Sichuan provinces.

Source: [South China Morning Post](#), [World Health Organization](#)

February 25: Senior CDC official Nancy Messonnier tells reporters that the coronavirus was likely to spread within the United States, and that disruptions to daily life could be “severe.”

Source: [Washington Post](#)

February 26: President Trump declares that the coronavirus poses a “very low” risk to the American people

Source: [NBC News](#), [Washington Post](#)

February 29: The United States reports its first death from COVID-19. Separately, government data indicates that about 60 percent of travelers on direct flights from China are not American citizens. Most were operated by Chinese airlines after American carriers halted their operations in accordance with the February 2 travel restrictions.

Source: [New York Times](#), [New York Times](#)

March 11: President Trump announces a 30-day travel ban on travelers who have been to the 26 European countries that comprise the Schengen Area, excluding Britain, to take effect two days later. At this point, New York has more than 220 diagnosed cases.

Source: [The White House](#), [New York Times](#)

March 13: The temporary travel ban on 26 European countries goes into effect. Every seat on every airplane from Europe to the United States is filled in the two days following the announcement and before it goes into effect. President Trump declares a national emergency in response to COVID-19 as the United States surpasses 1,000 cases.

Source: [The Atlantic](#), [New York Times](#)

March 18: President Trump invokes the Defense Production Act to produce and allocate medical resources, protective equipment, and ventilators. Trump releases a memo on March 28, detailing that General Motors will be required to “accept, perform, and prioritize contracts or orders for the number of ventilators that the Secretary [of Health and Human Services] determines to be appropriate.”

Source: [The White House](#)

March 19: President Trump announces that the FDA will fast track approval for certain treatments for COVID-19, including hydroxychloroquine.

Source: [CNN](#)

March 26: The United States becomes the world leader in COVID-19 cases, as it eclipses 81,321 infections and more than 1,000 deaths.

Source: [New York Times](#)

March 27: Secretary Esper modifies and accelerates the process for how the DoD authorizes the use of National Guard forces under Title 32 Section 502(f).

Source: [Department of Defense](#)

March 28: California is the first state to be notified of essential assistance from the DoD.

Source: [Department of Defense](#)

April 4: At least 430,000 people, it is learned, have arrived in the United States on direct flights from China since December 31. Nearly 40,000 people arrived on 279 flights from China in the two months since the Trump administration imposed restrictions on such travel on February 2.

Source: [New York Times](#)

April 8: The House Oversight Committee receives a complaint from a volunteer on the PPE procurement task force managed by Jared Kushner, President Trump's son-in-law and senior adviser. The volunteer force is reportedly composed of two dozen employees from consulting and private equity firms with little experience in the task at hand. They reportedly played a major role in vetting procurement leads for Federal Emergency Management Agency (FEMA), prioritizing leads from political "VIPs" while reportedly disregarding some legitimate offers of assistance.

Source: [Washington Post](#)

April 10: DoD receives approval from the White House coronavirus task force to execute the first Defense Production Act Title 3 project responding to COVID-19. The \$133M project will increase domestic production capacity of N95 masks to over 39 million in the next 90 days.

Source: [Department of Defense](#)

April 28: The United States becomes the first country to reach 1 million cases of COVID-19, accounting for roughly one third of the global cases.

Source: [Washington Post](#)

May 5: President Trump announces that the White House COVID-19 task force will wind down and be replaced by an advisory body in the coming weeks. Vice President Pence announces that he plans to conclude the task force's mission by the end of May.

Source: [New York Times](#)

May 12: DoD and HHS announce a \$138 million contract with ApiJect Systems America for “Project Jumpstart” and “RAPID USA,” expanding domestic production capability starting in October for injection devices suitable for combating COVID-19 when a safe, proven vaccine becomes available.

Source: [Department of Defense](#)

May 26: Secretary of Defense Mark Esper issues a memo to transition to a conditions-based, phased approach to personnel movement and travel restrictions for the military.

Source: [Department of Defense](#)

May 27: COVID-19 deaths in the United States surpass 100,000.

Source: [New York Times](#)

June 1: The Congressional Budget Office projects that the COVID-19 pandemic will cost the U.S. economy \$7.9 trillion over the next decade—3.0 percent of cumulative GDP.

Source: [New York Times](#), [Congressional Budget Office](#)

June 1: New York City begins a contact tracing program run by NYC Health + Hospitals, the city’s public hospital system, which lacks experience with such efforts. The city’s Department of Health and Mental Hygiene had been responsible for contact tracing efforts for decades, but, reportedly, internal tensions between the department and Mayor Bill de Blasio led him to shift oversight of contact tracing to the public hospital system.

Source: [Politico](#)

June 4: CDC Director Robert Redfield testifies before the House Appropriations Committee that he is “very concerned” that his agency’s public health messaging is not resonating with the public, as cases rise across the country.

Source: [CNBC](#)

June 8: 39 U.S. bases and five host nations meet conditions to lift DoD travel restrictions.

Source: [Military Times](#)

June 9: More than one dozen states and Puerto Rico record their highest averages of new cases since the pandemic began, with hospitalizations rising in at least nine states following Memorial Day.

HHS pledges to distribute approximately \$25 billion to hospitals that have not previously received relief funds.

Source: [Washington Post](#), [Reuters](#)

June 11: The White House shifts its attention to reopening and revitalizing the economy, in spite of a surge of cases across the United States.

DoD Supplements 10 and 11 are issued, outlining the strategy for COVID-19 pandemic response, including health surveillance activity, screenings, asymptomatic testing, and

sentinel surveillance strategy. The strategy also includes contact tracing and testing, guidance for DoD populations, and restrictions of movement.

Source: [Under Secretary of Defense](#), [CNN](#)

June 14: Officials in New York City and Houston consider another lockdown as citizens and businesses violate social distancing and reopening plans.

Source: [New York Times](#)

June 19: Government watchdogs on the Pandemic Response Accountability Committee warn that an ambiguity in the CARES Act could limit their ability to oversee more than \$1 trillion in government spending related to the coronavirus pandemic.

Source: [Associated Press](#)

June 19: An independent federal watchdog orders an investigation into the Transportation Security Administration's response to the coronavirus. A whistleblower alleged that the agency botched its initial handling of the pandemic and that it is still doing too little to protect travelers and its own employees.

Source: [Washington Post](#)

June 19: The Pentagon expands the lifting of travel restrictions for U.S. military personnel to include 46 states, Guam, and Puerto Rico, including several states that have experienced recent upticks in infections.

Source: [NPR](#), [Department of Defense](#)

June 21: The United States experiences a 25 percent increase in new cases for the week ending on June 21, compared to the previous seven days. White House Trade Advisor Peter Navarro states that the Trump administration is filling the national stockpile for a second wave of coronavirus infections in the fall, as deaths near 120,000.

3,000 contact tracers employed in New York City struggle to find infected people and obtain the information needed to trace close contacts.

Source: [Reuters](#), [Wall Street Journal](#), [New York Times](#)

June 22: Reports emerge that leaders of local and state health departments nation-wide have been subject to death threats and harassment from segments of the population that are displeased with mask regulations and restrictions on local businesses.

Source: [New York Times](#)

June 22: The Pentagon announces a memorandum of agreement for the U.S. International Development Finance Corp. to award and administer loans to increase domestic production of medical supplies, using authority under the Defense Production Act and funds provided by the CARES Act.

Source: [Bloomberg Law](#), [Department of Defense](#)

June 23: Dr. Fauci states that President Trump had not told health officials to slow down testing, and that the United States would be conducting more testing over the summer.

Source: [Wall Street Journal](#)

June 24: The United States records its highest number of new coronavirus cases in a single day, with 45,557 cases reported. This number exceeded the previous record on April 26 by more than 9,000 cases. New York, New Jersey, and Connecticut issue a travel advisory requiring people arriving from states with high coronavirus rates to quarantine for 14 days.

Source: [NBC News](#), [CNN](#)

June 25: The U.S. Government Accountability Office reports that the Treasury Department and Internal Revenue Service disbursed stimulus payments to almost 1.1 million dead people, totaling nearly \$1.4 billion.

Source: [Washington Post](#), [U.S. Government Accountability Office](#)

July 6: The Trump administration formally notifies the WHO that the United States will withdraw from the organization effective July 6, 2021.

Source: [New York Times](#)

July 6: The Pentagon announces that it is sending approximately 50 medical and support personnel to the San Antonio area to embed in medical care facilities, at the request of the FEMA.

Source: [CNN](#)

July 8: President Trump threatens to hold back federal money if school districts do not reopen for students in the fall. He states that his public health officials' safety guidelines are impractical and too expensive. COVID-19 cases surpass 3 million in the United States.

Source: [Associated Press](#), [Reuters](#)

July 12: Florida announces 15,299 new cases of COVID-19, the highest recorded single day increase in cases in the United States since the beginning of the pandemic.

Source: [NBC News](#)

July 15: The Trump administration orders hospitals to bypass the CDC with coronavirus patient information, and instead send all data to a central database at the HHS. The administration also asks that state governors consider sending the National Guard to hospitals to assist with data collection. Figures compiled by HHS officials for senior leaders of the interagency coronavirus task force show that the national stockpile is running low on personal protective equipment amid the surge in cases.

Source: [NBC News](#), [Washington Post](#)

July 16: The National Governors Association calls on the Trump administration to postpone its planned change to reporting rules for hospitals by 30 days.

Source: [The Hill](#)

July 29: The number of deaths reported in the United States reaches 150,000.

Source: [Reuters](#)

July 30: A senior administration official tells reporters that vaccine distribution will be a “joint venture” between the CDC and Department of Defense. The plan breaks with a longstanding precedent of the CDC distributing vaccines during major outbreaks through a centralized ordering system for state and local health officials.

Source: [Politico](#)

August 3: President Trump extends the federal deployment of nearly 25,000 National Guard members detailed to coronavirus relief efforts until the end of 2020. He orders states to start paying for 25 percent of the deployment.

Source: [Politico](#)

Biosecurity Legislation in the United States

1944: Public Health Services Act: This act allows HHS to respond to public health emergencies. It also allows the federal government to tap emergency powers in order to provide support for state and local governments, avoid select legal requirements temporarily, and access available public health emergency funds. The PHSA does not require the same formality or presidential intervention that the Stafford or National Emergencies Acts require.

Source: [National Institute of Health](#)

1950: Defense Production Act: The act, signed by President Truman, grants the federal government broad authority to direct private companies to aid and support national defense. It allows the president to require companies to prioritize government contracts, use loans and direct purchases to increase production of materials, and other measures necessary to address war efforts or national emergencies.

Source: [Department of Homeland Security - FEMA](#)

1975: National Emergencies Act: The NEA authorizes the president to declare a national emergency which, in turn, activates several crisis-related federal statutes. Presidents often use Section 201 of the Act in order to expand executive powers temporarily to address the emergency through dormant federal statutes.

Source: [United States Congress](#)

1988: Stafford Disaster and Relief and Emergencies Act: This act authorizes the federal government to deliver supplies and aid to states during disasters and emergencies through FEMA. The Stafford Act is typically only invoked when local and state governments do not have the requisite resources to respond to large crises. Either governors will petition for federal support or “the president may provide accelerated federal assistance where it is necessary to save lives or prevent severe damage.”

Source: [Department of Homeland Security - FEMA](#)

1990: Biological Weapons Anti-Terrorism Act: This act provides for the implementation of the Biological Weapons Convention, which prohibits the development of biological agents and weapons to deliver these agents in armed conflict. It also extends the scope of biological warfare materials to include private citizens and non-state organizations; makes it illegal to buy, sell, or manufacture microbial or biological agents to use as a weapon; and exempts peaceful, or “defensive,” biological weapons research.

Source: [United States Congress](#)

1996: Antiterrorism and Effective Death Penalty Act: This act expands the definition of “biological agent” to include products that can be engineered through biotechnology. Additionally, it directs the Secretary of Health and Human Services to: maintain a list of each biological agent that could pose a threat to public health; establish safety procedures for the transfer of listed agents to prevent them falling into the hands of terrorists; create a

procedure for the unfortunate event in which biological agents are transferred incorrectly; and make biological agents available for research, education, and other legitimate purposes.

Source: [United States Congress](#)

2001: USA Patriot Act: This act “deter[s] and punish[es] terrorist acts in the United States and around the world [and] enhance[s] law enforcement investigatory tools.” The act “prescribes penalties for knowing possession in certain circumstances of biological agents, toxins, or delivery systems, especially by certain restricted persons.”

Source: [Congressional Research Service](#)

2002: Public Health Security and Bioterrorism Preparedness and Response Act: The Act establishes procedures for bioterrorism and public health emergencies, creates the National Disaster Medical system through which teams of medical and health professionals volunteer in emergency situations, and institutes security risk assessment of individuals who have access to biological agents in order to further secure the country from a disastrous accident.

Source: [United States Congress](#)

2004: Defense of United States Agriculture and Food (Homeland Security Presidential Directive 9): This presidential directive “establishes a national policy to defend the agriculture and food system against terrorist attacks, major disasters, and other emergencies.” Fulfilling the policy requires recognition of important agriculture and food infrastructure and ensuring their protection, development of mechanisms that provide early warning to threats, reduction of weaknesses during production and processing, enhancement of both product screening procedures, and response and recovery.

Source: [Federation of American Scientists](#)

2004: Biodefense for the 21st Century (Homeland Security Presidential Directive 10/National Security Presidential Directive 33): This directive continues existing efforts to evaluate biodefense programs by identifying future priorities and actions and integrating the work of national and homeland security, medical, public health, intelligence, diplomatic, and law enforcement communities. The classified version contains specific directions on how departments and agencies are to implement this biodefense program.

Source: [Federation of American Scientists](#)

2004: Project BioShield Act: This act calls for \$5 billion for purchasing vaccines in the event of a bioterrorist attack. It also allowed stockpiling and distribution of vaccines that had not been tested for safety or efficacy on humans. The act adds the Secretary of the Department of Homeland Security to the working group on prevention, preparedness, and response to bioterrorism and other public health situations and grants the National Institute of Health and the National Institute of Allergy and Infectious Disease authorities to expedite the process of awarding grants and contracts for the development of key medical countermeasures. Finally, it establishes the Emergency Use Authorization to provide access to the best medical countermeasures if a declaration of emergency is issued by the Secretary of HHS in response to a biological weapon/public health threat.

Source: [United States Congress](#)

2006: USA Patriot Improvement and Reauthorization Act: This act was intended as a renewal of 16 sunset provisions scheduled to expire December 31, 2005, contained in the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001.

Source: [Department of Justice](#)

2006: Pandemic and All-Hazards Preparedness Act: This act "reauthorizes the Public Health Security and Bioterrorism Preparedness and Response Act, identifies the Secretary of Health and Human Services (HHS) as the lead federal official responsible for public health and medical response to emergencies including a flu pandemic, establishes standard of preparedness from state-to-state, and requires individual states to meet performance standards developed by the Secretary of HHS." In addition, the legislation moves management of the Strategic National Stockpile from the CDC to the office of the HHS Assistant Secretary for Public Health Emergency Preparedness.

Source: [Congressional Research Service](#)

2007: Public Health and Medical Preparedness (Homeland Security Presidential Directive 21): This directive establishes a National Strategy for Public Health and Medical Preparedness, which builds upon principles set forth in Biodefense for the 21st Century (April 2004) and aims to transform the national approach to protecting the health of the American people against all disasters.

Source: [The White House](#)

2011: FDA Food Safety Modernization Act: This act amends the Federal Food, Drug, and Cosmetic Act to expand the food safety activities of the Secretary of HHS, including to authorize the Secretary to inspect records related to food. It requires the Secretary to: (1) allocate resources to inspect facilities and imported food according to the known safety risks of the facilities or food; and (2) establish a product tracing system to track and trace food that is in the United States or offered for import into the United States. It also requires the Secretary, acting through the director of the CDC, to enhance foodborne illness surveillance systems to improve the collection, analysis, reporting, and usefulness of data on foodborne illnesses.

Source: [U.S. Congress](#)

2013: Pandemic and All-Hazards Preparedness Reauthorization Act of 2013: This act amends the Public Health Service Act to require the Secretary of Health and Human Services to submit the National Health Security Strategy to the relevant congressional committees in 2014. It revises the Strategy's preparedness goals, in part to specify that the drills and exercises included in periodic evaluations of federal, state, local, and tribal preparedness and response capabilities also include drills and exercises to ensure medical surge capacity for events without notice.

Source: [U.S. Congress](#)

2016: ECHO Act: This bill requires HHS to report on technology-enabled collaborative learning and capacity building models, which connect specialists to primary care providers

through videoconferencing to facilitate case-based learning, dissemination of best practices, and evaluation of outcomes.

Source: [U.S. Congress](#)

2016: 21st Century Cures Act: This act is designed to accelerate medical product development and bring new innovations and advances to patients who need them faster and more efficiently. It provides funding for National Institutes of Health (NIH) Innovation Projects, which include the Precision Medicine Initiative and the BRAIN Initiative. It also builds on the Food and Drug Administration's work to incorporate the perspectives of patients into the development of drugs, biological products, and devices in FDA's decision-making process.

Source: [Congressional Research Service](#), [U.S. Food and Drug Administration](#)

2017: Securing our Agriculture and Food Act: This bill amends the Homeland Security Act of 2002 to direct the Assistant Secretary for Health Affairs for the Department of Homeland Security (DHS) to carry out a program to coordinate DHS efforts related to defending the food, agriculture, and veterinary systems of the United States against terrorism and other high-consequence events that pose a high risk to homeland security.

Source: [U.S. Congress](#)

2019: The Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2019: This act solidifies the Intelligence community's role of detecting and monitoring potential health emergencies through cooperation with HHS. This act also dictates that domestic intelligence and biosurveillance does not fall under the jurisdiction of the IC, rather HHS and the CDC have responsibility for public health surveillance. This act also grants additional authority to the Secretary of HHS during public health emergencies.

Source: [Congressional Research Service](#)

Coronavirus Legislation in the United States

2020

March 6: The Coronavirus Preparedness and Response Supplemental Appropriations Act: This act provides \$8.3 billion in emergency funding for various federal agencies to respond to COVID-19; approximately 80 percent for the domestic response and 20 percent for international aid, which includes support for global health systems, humanitarian missions, economic and security initiatives, and emergency detection and response efforts. Money is allocated domestically to the HHS, the Small Business Administration, and telehealth services, as well as USAID, the State Department, and the CDC for the international response.

Source: [Kaiser Family Foundation](#), [United States Congress](#)

March 18: Families First Coronavirus Response Act: This legislation is passed to provide \$3 billion to contain the spread of the COVID-19 outbreak and its harm on health and the

economy by expanding paid sick leave, ensuring that insurance will cover coronavirus testing, instituting a nutrition assistance program, and providing unemployment benefits.

Source: [U.S. Department of Labor](#)

March 27: The Coronavirus Aid, Relief, and Economic Security (CARES) Act: This \$2 trillion stimulus legislation provides \$142 billion for HHS to support health care and medical support as well as to prepare for purchasing a COVID-19 vaccine once available. Hospitals and health care providers can receive financial support from the Provider Relief Fund. The act includes loan and grant programs for small businesses, expanded unemployment benefits, stimulus checks, corporate loans, and financial support for state and local governments.

Source: [U.S. Department of the Treasury](#)

April 24: Paycheck Protection Program and Health Care Enhancement Act: This act gives an additional \$484 billion to the CARES Act programs including the Paycheck Protection Program and Disaster Loans Program, which includes \$75 billion for the Provider Relief Fund and \$25 billion to expand COVID-19 testing and contact tracing. The bill will also help fund states as they respond to the pandemic, develop new technologies (contact tracing, public health surveillance, etc.) and advance research.

Source: [Congressional Budget Office](#)

UNITED KINGDOM

With the third highest mortality rate in the world, the United Kingdom stands out for its dismal response to the COVID-19 pandemic.¹² While the country was able to flatten the curve and maintain a relatively low rate of percent positive cases in the summer of 2020, the government's delayed and controversial response contributed to the high number of deaths early in the pandemic.

The ultimately ineffective response can be attributed to one primary factor: an existing pandemic strategy that guided the government's most trusted scientific advisors not to plan for the worst-case scenario. This likely led multiple scientific advisory councils—which were responsible for policy recommendations to Prime Minister Boris Johnson's cabinet—to delay implementation of the more aggressive containment measures that the strategy prescribed, though such measures were already being enforced in other European countries.

Following the 2009 H1N1 pandemic, the UK released the 2011 Influenza Preparedness Strategy, which updated the 2007 framework. The new strategy, which remains the guiding document, “put in place plans to ensure a response that is proportionate to meet the differing demands of pandemic influenza viruses... rather than just focusing on the ‘worst case’ planning assumptions.”¹³ Diving deeper into the UK's strategy documents, it becomes apparent that the UK viewed pandemics as a top-tier *threat* to national security, but not a top-tier *risk*. Essentially, the UK understood that pandemics were highly likely to occur in the future, but assumed that the country was not *vulnerable* to the threat due to its preparedness mechanisms. This assumption is evident in the UK's first biosecurity strategy, released in July 2018, in which the authors focused heavily on the UK's efforts to assist developing, low-to-middle income countries in preventing infectious disease outbreaks.

Incoherent and conflicting messages to the public also plagued the UK's early response to the pandemic. In early January 2020, the UK appeared to have the medical components necessary to ensure an effective response: a world-renowned scientific community, up-to-date biosecurity and pandemic response strategies, and multiple scientific advisory councils on call. Yet despite knowing the potential for high fatalities, the scientists advising Johnson's cabinet repeatedly downplayed the threat.

Johnson himself may have been preoccupied with other political priorities. The first confirmed case in the UK coincided with the country's exit from the European Union on January 31, 2020. Between mid-February and the end of March, the UK missed eight meetings about COVID-19 between EU heads of state or health ministers, despite still being entitled to join them. Had Johnson been more open to regional information-sharing and cooperation, the UK may have benefitted from a more timely and informed response.

¹² With 70.08 deaths per 100,000 people, the United Kingdom has the third highest mortality rate in the world, after the microstate of San Marino with 124.32 deaths/100k and Belgium with 86.38 deaths/100k.

¹³ “UK Influenza Pandemic Preparedness Strategy 2011,” United Kingdom Department of Health.

By mid-March 2020, Johnson’s administration realized that it had made a crucial error. With the number of infections and deaths rapidly increasing, the prime minister and his chief medical and scientific advisors attempted to convince a panicked public that “herd immunity” would be a winning strategy: life would continue without strict mitigative measures, with the goal of creating an immunity in society through widespread infection.¹⁴ Within days, however, they reversed course, locking down the country and ramping up procurement of personal protective equipment and production of ventilators.

The UK’s containment measures were ultimately successful in flattening the curve, but they came too late to prevent great loss of life. Within the timeframe of this report, the country’s mortality rate was 70.8 deaths per 100,000 people. The UK also suffers from similar cultural issues to those observed in the United States. Masks mandates have been a controversial issue, with citizens protesting against such measures as an overreach of state power.¹⁵ Without effective and consistent communication from the government on why containment measures like masks, lockdowns, or contact tracing are necessary—and a leader to serve as the example of what should be done—the United Kingdom has continued to face obstacles in its fight against COVID-19 and, likely will so in future pandemics.

¹⁴ According to Johns Hopkins University, herd immunity “occurs when most of a population is immune to an infectious disease, [which] provides indirect protection—or herd immunity (also called herd protection)—to those who are not immune to the disease ... Depending how contagious an infection is, usually 70% to 90% of a population needs immunity to achieve herd immunity.” (Source: [Johns Hopkins Bloomberg School of Public Health](#)).

¹⁵ Emilio Casaliccio, “How masks became a fault line in Britain’s culture war,” *Politico*. July 15, 2020. Available from <https://www.politico.com/news/2020/07/15/masks-britain-culture-war-365370>.

The United Kingdom's Biosecurity Timeline

This timeline begins in 2011, when the United Kingdom updated its pandemic preparedness strategy following the H1N1 pandemic. It was not until 2018 that the UK first developed a biosecurity strategy and established interagency boards responsible for its implementation, in contrast to other countries in this report that developed strategies far earlier. The UK government's response to COVID-19, detailed in this timeline, illustrates this lack of preparedness and the underlying assumption of invulnerability.

2011

November 10: The UK publishes an Influenza Pandemic Preparedness Strategy, updating its previous 2007 National Framework following the H1N1 pandemic in 2009. Two of the changes in strategy are to “put in place plans to ensure a response that is proportionate to meeting the differing demands of pandemic influenza viruses of milder and more severe impact, rather than just focusing on the ‘worst case’ planning assumptions.”

Source: [UK Department of Health, Social Services, and Public Safety](#)

2018

July 30: The UK releases its first Biological Security Strategy, which details implementation and the establishment of a new cross-departmental governance board to oversee implementation. The board reports to the National Security Council, while the Government Chief Scientific Adviser maintains oversight of the strategy's outcomes.

Source: [UK Government](#)

October 24: The House of Lords' EU Energy and Environment Sub-Committee publishes a report on the potential impact of Brexit on plant and animal biosecurity. The Committee urges the government to seek continued participation in the EU's notification and intelligence sharing networks, advising continued cooperation.

Source: [UK Parliament](#)

2019

July 2019: The Parliamentary Joint Committee on the National Security Strategy launches an inquiry into the government's approach to infectious diseases and bioweapons.

Source: [UK Parliament](#)

2020

January 10: British health officials develop a test for the novel coronavirus and assign a single public laboratory in north London to conduct the tests. There was no existing plan to use the hundreds of laboratories, both public and private, across the country.

Source: [Reuters](#)

January 13: The UK's New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) meets and studies information from China that there is "no evidence of significant human to human transmission" of the new virus. The scientists agree the risk to the UK population is "very low."

Source: [Reuters](#)

January 21: Scientists on NERVTAG endorse the elevation of the UK risk warning from COVID-19 from "very low" to "low."

Source: [Reuters](#)

January 22: The UK's [Scientific Advisory Group for Emergencies \(SAGE\)](#) begins meeting twice weekly to discuss COVID-19. SAGE is responsible for providing Cabinet Office Briefing Room (COBRA) meetings with coherent, coordinated advice, and to interpret complex or uncertain scientific evidence in non-technical language.

Source: [UK Government](#), [Cabinet Office](#)

January 30: The government raises the threat level from "low" to "moderate."

Source: [Reuters](#)

January 31: The first two cases of COVID-19 are confirmed in the UK, the same day the UK formally exits the European Union. By late January, Britain's Chief Medical Officer Chris Whitty is reportedly warning politicians in private that if the virus escaped China, it would in time infect the majority of people in Britain.

Source: [BBC News](#), [Reuters](#)

February 12: A report from Exeter University warns that a UK outbreak could peak within four months and, without mitigation, infect 45 million people (about 68 percent of the population).

Source: [Reuters](#)

February 13: Britain's Chief Medical Officer Chris Whitty states in a BBC interview that a UK outbreak was still an "if, not a when."

Source: [Reuters](#)

February 21: Scientists at NERVTAG convene amid news of outbreaks in Italy and Iran, where the UK has close ties. They decide against advising the government to raise the threat level, recommending that it remain at "moderate."

Source: [Reuters](#)

March 3: The UK government publishes its action plan for COVID-19.

Source: [The Guardian](#)

March 4: The UK's pandemic modelling committee SPI-M produces its "consensus report," saying that the coronavirus is not transmitting freely in the UK.

Source: [Reuters](#)

March 5: The first death in the UK is announced.

Source: [Reuters](#)

March 9: The Scientific Advisory Group for Emergencies (SAGE) recommends, with no dissent recorded, that the UK reject a China-style lockdown, days after Italy, Spain, and France announce national lockdowns.

Source: [Reuters](#)

March 12: The government raises the threat level from “moderate” to “high,” announcing that it has moved from trying to contain the disease to trying to slow its spread. New cases will not be tracked at all – only hospital cases will be tested for the virus.

Source: [Reuters](#)

March 13: Britain’s Chief Scientific Adviser Sir Patrick Vallance defends the government’s approach to COVID-19, suggesting that it could have the benefit of creating “herd immunity” across the population.

Source: [The Guardian](#), [Financial Times](#)

Mid-March: The government begins issuing urgent requests to labs for assistance with staff and testing equipment. An executive at the Weatherall Institute of Molecular Medicine at the University of Oxford said he could have carried out up to 1,000 tests per day starting in February, but the call did not come until mid-March.

Source: [Reuters](#)

March 16: Imperial College publishes a report predicting that, if uncontained, the virus could kill 510,000 people, and that the government’s current approach could still lead to 250,000 deaths. Meanwhile, Johnson launches an appeal to industry to ramp up production of ventilators. He advises citizens to avoid non-essential travel and contact.

Source: [Reuters](#), [The Guardian](#)

March 19: The British military stands up a COVID-19 support force. The Ministry of Defense’s Standing Joint Command will be the Command and Control Structure for the COVID Support Force. Scientists from the Defence Science and Technology Laboratory are supporting Public Health England’s effort to understand the virus and tackle the spread.

Source: [UK Ministry of Defence](#)

March 20: Johnson orders all cafes, pubs, and restaurants closed.

Source: [BBC News](#)

March 25: Johnson announces a full lockdown.

Source: [Reuters](#)

March 26: Parliament shuts down for one month, after passing the Coronavirus Act 2020, the Contingencies Fund Act, and the Health Protection (Coronavirus, Restrictions) Regulations 2020. See “Coronavirus Legislation” section for more information.

Source: [BBC News](#)

March 27: Johnson tests positive for COVID-19.

Source: [BBC News](#)

April 5: Johnson is admitted to the hospital, moving to intensive care on April 6. Britain has now carried out 195,524 tests, in contrast to at least 918,000 completed a week earlier in Germany.

Source: [The Guardian](#), [Reuters](#)

April 12: Johnson discharged from hospital.

Source: [BBC News](#)

May 5: UK Chief Scientific Adviser Patrick Vallance states that herd immunity was never the UK strategy. Speaking to MPs on the House of Commons health committee, Vallance stresses that the strategy has always been trying to suppress the peak and keep it below the level at which the National Health Service can cope.

Source: [Politico](#)

May 10: Johnson announces a five-tier coronavirus alert system, which is to be managed by a newly established Joint Biosecurity Centre. The Centre will have an independent analytical function that will provide real time analysis and assessment of infection outbreaks at a community level, to enable rapid intervention before outbreaks grow.

Source: [The Guardian](#), [UK Government](#)

May 11: The UK government provides parliament with its recovery strategy and plan to rebuild from COVID-19.

Source: [UK Government](#)

May 12: Tom Hurd, a senior Home Office counterterrorism official, is put in charge of the new Joint Biosecurity Centre. A professor of virology at University College London, among others, expresses concern that the new structure will be set up outside the National Health Service and Public Health England, which are traditionally responsible for disease control.

Source: [The Guardian](#), [UK Government](#), [Financial Times](#)

June 5: Dr. Clare Gardiner assumes the role of Director General of the Joint Biosecurity Centre to take it through to full operating capability later this year.

Source: [UK Parliament](#)

June 10: Epidemiologist Neil Ferguson, a former member of the UK government's scientific advisory body, tells lawmakers that Britain's death toll from COVID-19 could have been halved if the lockdown had been introduced one week earlier.

Source: [Reuters](#)

June 19: The government lowers the COVID-19 alert system from level four to level three following a recommendation from the Joint Biosecurity Centre, indicating that the virus is

considered to be “in general circulation” and that there could be a “gradual relaxation of restrictions.” Previously, transmission was considered to be “high or rising exponentially.”

Source: [BBC News](#)

July 10: The United Kingdom opts out of the European Union’s COVID-19 vaccine scheme.

Source: [BBC News](#)

July 14: An expert advisory group from the Academy of Medical Sciences suggests that, in a worst-case scenario, there could be 119,900 additional hospital deaths in the winter of 2020 from the novel coronavirus. Prime Minister Boris Johnson mandates that people wear masks inside shops and supermarkets in Britain.

Source: [CNBC](#), [New York Times](#)

July 17: The government reportedly plans to distribute millions of free coronavirus antibody tests after a version backed by the United Kingdom passed its first major trials. The tests were found to be 98.6 percent accurate in human trials held in June.

Source: [Reuters](#)

July 18: Britain pauses its daily update of the death toll from the coronavirus after the government orders a review over data calculation. There are concerns that the death toll may have been exaggerated.

Source: [Reuters](#)

Biosecurity Legislation in the United Kingdom

1984: Public Health (Control of Disease) Act 1984: This law consolidates certain enactments relating to the control of disease and to the establishment and functions of port health authorities.

Source: [UK Government](#)

2002: Control of Substances Hazardous to Health Regulations 2002: These Regulations re-enact, with modifications, the Control of Substances Hazardous to Health Regulations 1999.

Source: [UK Government](#)

2004: Civil Contingencies Act: This law requires local and regional authorities to designate detailed plans for dealing with an emergency. The act grants ministers wide-ranging powers during an emergency, including the right to amend any act of parliament except the Human Rights Act, and such amendments will last only for 21 days. The Act includes guarantees to ensure that the powers are only evoked in a genuine emergency, and limits the use of emergency powers to 30 days.

Sources: [UK Government](#), [The Guardian](#)

2005: NHS Emergency Planning Guidance: This guidance provides critical care contingency planning in the event of an emergency where the number of patients substantially exceeds normal critical care capacity.

Source: [UK Government](#)

2012: Health and Social Care Act: Under this act, the Secretary of State may make regulations to prevent, protect against, control, and provide a public health response to an incident or to the spread of infection or contamination in England, including instances when the threat originates from outside the country.

Source: [UK Government](#), [U.S. Library of Congress](#)

Coronavirus Legislation

2020: Coronavirus Act 2020: This act provides emergency powers to the government. It includes emergency registration and arrangements for medical and other essential workers; local authority care and support; information related to food supply chains; temporary continuity planning; powers to act for the protection of public health; power to suspend port operations; powers relating to potentially infectious persons; powers to issue directions relating to events, gatherings, and premises; among others.

Source: [UK Government](#)

2020: Contingencies Fund Act: This act increases the maximum capital of the UK contingency fund from 2 percent to 50 percent in response to the COVID-19 pandemic.

Source: [UK Government](#)

2020: The Health Protection (Coronavirus, Restrictions) Regulations 2020: The Secretary of State makes the following Regulations in exercise of the powers conferred by the Public Health (Control of Disease) Act (1984).

Source: [UK Government](#)

GERMANY

In the early days of the pandemic, Germany led an effective response to the COVID-19 pandemic, with 11.04 deaths per 100,000 people—a relatively low mortality rate when compared to its neighbors, which averaged 26 deaths per 100,000 people.¹⁶ The country's percent positive test rate did not exceed 6.9 percent as of this writing.

Germany's progress reflected the competent leadership of Chancellor Angela Merkel, a strong scientific community, and the incorporation of societal factors into its national strategy. A well-established system for handling infectious disease outbreaks has also ensured that the strength of these individual components is channeled into a coherent and effective response at all levels of government.

A trained scientist, Merkel has earned international acclaim for her steady, methodical approach to the crisis. Public trust in her leadership soared in early 2020, and compliance with government guidelines was overwhelming. Though Germany has experienced a high number of infections, the country's death rate in the early stages of the pandemic was low, reflecting an aggressive testing regime, strict lockdowns, and a top-notch scientific community and healthcare system. Germany's federal system of governance also empowered the country's 16 states to form their own strategies and policies, supported by post-9/11 legislation that established a nationwide network of infectious disease treatment centers. Following the H1N1 pandemic in 2009, Germany established the German Biosafety Programme in 2013 and an Influenza Pandemic Preparedness Plan in 2016, both of which further contributed to the government's success in managing COVID-19.

However, one of Germany's greatest challenges throughout the pandemic has been public discomfort with digital location tracking and contact tracing. These methods of flattening the curve had been successful in countries like South Korea and Taiwan, but Germany's strict data privacy legislation and culture have forced the government to rely instead on strict social distancing to slow the spread. In late March, the German government attempted to implement contract tracing measures by passing an amendment to its Protection Against Infection law that contained a clause on location tracking, but was forced to drop the clause amid public backlash.

The government recognized these cultural limitations, and decided in favor of strict lockdowns, which the public generally adhered to early on. Nonetheless, the COVID-19 pandemic has brought data privacy to the forefront of public debate in Germany. Moving forward, the government will need to reconcile tensions between privacy legislation and public health demands, or alternatively, it must empower the tech sector to devise creative, more palatable methods of location tracking and contact tracing that comply with existing legislation.

¹⁶ The nine countries neighboring Germany have the following mortality rates (deaths per 100,000 people in the population) as of August 8, 2020: Denmark, 10.64; Poland, 4.7; Czech Republic, 3.66; Switzerland, 23.32; Austria, 8.14; France, 45.27; Belgium, 86.38; Luxembourg, 19.58; and the Netherlands, 35.38.

Germany's Biosecurity Timeline

This timeline illustrates Germany's awareness of the full range of biosecurity threats following the 9/11 attacks to the present day. Germany's biosecurity legislation and strategic planning, and its establishment of treatment centers for persons with highly infectious diseases over a decade before COVID-19, proved to be a successful combination.

2002

December 19: Germany begins procuring large stocks of smallpox vaccines, warning of a bioterrorism threat. Germany's federal states are scheduled to receive 650 civil defense vehicles, some of which can detect radioactive, biological, and chemical materials.

Source: [Deutsche-Welle](#)

2003

Germany establishes a network of medical competence and treatment centers to care for persons with highly infectious diseases, known by the acronym STAKOB. The federal Lander (Germany's federal states) are responsible for guaranteeing a high level of appropriate training and simulation exercises at all of these facilities.

Source: [Federal Ministry of Health](#), [Robert Koch Institute](#)

2013

Germany's Federal Foreign Office establishes the Germany Biosafety Programme, the goal of which is to implement sustainable biosafety and biosecurity projects in various countries under the auspices of the G7 Global Partnership against the Spread of Weapons and Materials of Mass Destruction.

Source: [German Federal Foreign Office](#)

2014

May 8: The German Ethics Council requests that the German government enact biosecurity legislation on experiments involving harmful biological substances.

Source: [Deutsche-Welle](#)

2016

In 2016, Germany released its Influenza Pandemic Preparedness Plan, which consists of two parts. Part I describes the pandemic plan, structures, and specific measures, while Part II describes the current scientific knowledge on pandemic influenza preparedness planning and response to pandemic influenza.

Source: [Robert Koch Institute](#)

August 24: The German Cabinet approves a new civil defense plan, meant to provide better protection for citizens during catastrophes and crises. The plan, which replaces a previous strategy laid out in 1995, is aimed at taking account of new threats facing society in the 21st century, including terrorism, cyberwarfare, and infrastructure attacks.

Source: [Deutsche-Welle](#)

2020

January 27: Germany registers its first case of the novel coronavirus. An official assessment from the German government reports that the disease poses a “very low” risk to Germany.

Source: [Deutsche-Welle](#), [Die Rheinpfalz](#)

January 29: The German government publishes information pages about the novel coronavirus and releases hygiene tips in multiple languages.

Source: [Twitter](#), [German Government](#)

February 28: Germany’s coronavirus response team—led by the ministries of health and the interior—adopts guidelines, which include a requirement that passengers travelling from hot spots report their health status. The government announces plans to enhance police border checks and centralize procurement and stockpiling of essential equipment.

Source: [German Government](#)

March 2: Germany raises the threat level to “moderate.” Infections are detected in 10 of the country’s 16 regions, and Germany begins the month with 140 positive cases. The health ministry states that cancelling all mass events, shutting businesses, and closing borders is neither appropriate nor necessary.

March 16: Germany imposes temporary controls on its borders with France, Switzerland, Austria, Denmark, and Luxembourg.

Source: [BBC News](#)

March 19: The German Defense Ministry announces plans to mobilize nearly 30,000 reservists to augment Germany’s military services in responding to the coronavirus.

Source: [Deutsche-Welle](#)

March 22: Germany announces strict social distancing measures, banning public gatherings of more than two people, except for families and those who live together. All but essential businesses are closed. The federal government does not order citizens to stay at home, but the states of Bavaria and Saarland put residents on lockdown.

Source: [Deutsche-Welle](#)

March 28: The German military’s procurement office allocates \$261 million to find medical protective equipment on the global market, which the Health Ministry will then distribute among clinics and doctors’ offices in Germany. The Bundeswehr has also started to provide food, beds, and mobile medical facilities, and is storing medical goods.

Source: [Deutsche-Welle](#), [Deutsche-Welle](#)

May 25: Council of Europe security experts warn of an increased threat of bioterrorism after COVID-19. They call on the 47 Council of Europe member states to prepare to fight a biological weapons attack by engaging in training exercises.

Source: [Deutsche-Welle](#)

June 3: EU ambassadors discuss using an emergency 2.4 billion-euro (\$2.7 billion) fund to make advance purchases of promising coronavirus vaccines. Germany, France, Italy, and the Netherlands negotiate with pharmaceutical companies to secure access to vaccines under development.

Source: [Reuters](#)

June 13: Germany, France, Italy, and the Netherlands sign an initial deal with pharmaceutical company AstraZeneca for over 300 million doses of a promising coronavirus vaccine currently in the experimental phase.

Source: [Deutsche-Welle](#)

June 16: Germany launches a voluntary contact-tracing mobile app, becoming the largest Western country to do so. The app was launched weeks later than planned because of debates within the government about data protection. Only 41 percent of Germans have downloaded it. Experts estimate that 60 percent of the population would need to use the app for it to be effective in preventing a second wave of infections.

Source: [Wall Street Journal](#)

June 25: Germany experiences a spike of 1,500 coronavirus infections within days, after an outbreak at a slaughterhouse in Tönnies. New cases increased by more than a quarter in most of the country over the last week.

Source: [New York Times](#)

July 16: German states and the federal government reach an agreement on “more targeted measures” to address localized outbreaks of Covid-19. Entire districts will no longer be required to lockdown in the case of a localized outbreak; only targeted hotspots will be subject to quarantine and lockdown measures.

Source: [Deutsche-Welle](#)

Biosecurity Legislation in Germany

1990: Genetic Engineering Act: This law creates the legal framework for the research, development, use, and promotion of the scientific, technical, and economic possibilities of genetic engineering. It sets up a Central Commission for Biosafety.

Source: [Bundesamt für Justiz](#)

2013: Ordinance on Safety and Health Protection at Workplaces Involving Biological Agents: This ordinance applies to activities involving biological agents. It sets out measures for the protection of the safety and health of employees against hazards arising from such activities. It also sets out measures for the protection of other persons insofar as they may be at risk due to the use of biological agents by employees or business owners without employees.

Source: [Bundesamt für Justiz](#)

2000: Protection Against Infection Act: This act regulates the prevention and management of infectious diseases in humans.

Source: [Robert Koch Institute](#)

Coronavirus Legislation

March 4, 2020: Law for the Protection of the Population in an Epidemic Situation of National Scope: This Law ensures quick and transnational crisis response measures through temporary authorization.

Source: [Bundestag](#)

May 5, 2020: Second Law for the Protection of the Population in an Epidemic Situation of National Scope: This law sets out regulations to further mitigate the consequences of the coronavirus pandemic.

Source: [Bundestag](#)

SOUTH KOREA

South Korea had an exceptional early response to the COVID-19 pandemic, moving rapidly to flatten the curve through data-driven mitigative measures. As of August 2020, the country had the third lowest mortality rate among the countries observed in this report, with 0.59 deaths for every 100,000 people. The country's percent positive test rate peaked at 8 percent in late January and remained around 1 percent in later months, reflecting its effective biosecurity legislation, Seoul's "smart city" infrastructure, and strong public trust in the government's ability to handle the pandemic. Though South Korea experienced an infection spike in the capital Seoul in late May, the government under President Moon Jae-in was overwhelmingly successful in containing the virus since its emergence in January, notably without ever imposing a lockdown on citizens.

South Korean policymakers learned valuable lessons from their mishandling of the Middle East Respiratory Syndrome (MERS) coronavirus outbreak in 2015.¹⁷ While MERS infected 186 South Koreans and killed 38—relatively few compared to the current pandemic, which had infected more than 14,000 South Koreans and killed just over 300 people by August 2020—authorities were criticized at the time for their delayed response and lack of transparency. Before MERS had ended in South Korea, legislators began amending public health legislation to grant the government specific powers, which would enable it to respond more effectively to future infectious disease outbreaks. Many of those powers relate to data collection and information disclosure during an infectious disease outbreak.¹⁸

This forward-thinking legal regime, combined with Seoul's launch of the National Strategic Smart City initiative in 2018, enabled the government to center its COVID-19 response around data and artificial intelligence—in contrast to other democracies, which relied primarily on strict lockdowns in light of data privacy concerns.¹⁹ South Korea's demonstrated ability to track the virus and its willingness to communicate transparently with its citizens appears to have generated a high level of public trust in the government's response. Though they are not mandated to stay indoors, the vast majority of South Koreans abide by social distancing guidelines and participate in non-compulsory government initiatives, such as self-quarantine and safety mobile applications. Furthermore, there is no social stigma associated with wearing masks—they are commonly worn in South Korea during flu seasons.

South Korea's well-equipped, adaptable healthcare infrastructure has further strengthened its pandemic response, as evidenced by the country's drive-thru testing facilities, among many other innovative initiatives. By providing ample support to private sector biotech

¹⁷ Derek Thompson, "What's Behind South Korea's COVID-19 Exceptionalism," *The Atlantic*. May 6, 2020. Available from <https://www.theatlantic.com/ideas/archive/2020/05/whats-south-koreas-secret/611215/>.

¹⁸ Brian Kim, "Lessons for America: How South Korean Authorities Used Law to Fight the Coronavirus," *Lawfare*. March 16, 2020. Available from <https://www.lawfareblog.com/lessons-america-how-south-korean-authorities-used-law-fight-coronavirus>.

¹⁹ Myunggu Kang, "How is Seoul, Korea transforming into a smart city," World Bank Group. January 23, 2020. Available from <https://blogs.worldbank.org/sustainablecities/how-seoul-korea-transforming-smart-city>.

companies and academic researchers, the government is establishing relationships that will lay the groundwork for effective responses to future public health emergencies. South Korea is well-positioned to lead the world in biosecurity preparedness—its next challenge may be to persuade other nations to adopt its data-centric model.

South Korea's Biosecurity Timeline

This timeline begins with South Korea's poor handling of Middle East Respiratory Syndrome (MERS) in 2015. The government's initial decision to withhold information from its citizens resulted in a public backlash and led to the creation of a crowd-sourced map to track cases, which went viral and forced the government to become more transparent. In addition to the lessons learned on transparency, South Korea also practiced aggressive contact tracing—a central feature of its response to COVID-19 five years later—and updated its biosecurity legislation. Finally, Seoul's evolution as a "smart city" in the two years prior to the outbreak of COVID-19 foreshadowed the country's success in using data to contain COVID-19.

2015

May 20: South Korea reports its first case of MERS, a 68-year old man returning from the Middle East. He went undiagnosed for nine days after first seeking medical attention, visiting four healthcare facilities during that time.

Source: [Yonhap](#), [Wall Street Journal](#), [New York Times](#)

June 2: South Korea's Ministry of Health creates a database for medics to identify and track MERS patients, but refuses to release the information to the public "to avoid misunderstanding and excessive anxiety."

Source: [The Korea Herald](#)

June 3: South Korea begins aggressive contact tracing, with 1,369 contacts under quarantine or isolation at home or in state-run facilities.

Source: [World Health Organization](#)

June 3: A 26-year-old programmer named Park Sun-yeong publishes MERS Map, a crowd-sourced website tracking healthcare facilities that have been exposed to infected patients. In its first day, the site registers 2.5 million visitors, with 10,000 visits per minute.

Source: [PBS](#)

June 7: The South Korean government discloses the names of all 24 hospitals affected by MERS, after facing public criticism for its lack of transparency throughout the outbreak.

Source: [The Korea Herald](#)

June 19: South Korea's Ministry of Health and Welfare announces that the outbreak has "leveled off." Future president Moon Jae-in, then the opposition leader, criticizes the response of President Park Geun-hye's government.

Source: [CNN](#), [New York Times](#)

July 6: South Korea reports no new cases of MERS, with the total number of people diagnosed standing at 186 and the total number of deaths at 33.

Source: [Yonhap](#)

July 6: South Korean legislators amend the Infectious Disease Control and Prevention Act to grant greater authority to public health officials, allowing them to close facilities and gain access to the personal information of people suspected of being infected. The amendment requires information sharing between central and local authorities, and explicitly designates local governments responsible for disease control measures.

Source: [Korea Legal Research Institute](#), [Korea Legal Research Institute](#), [Korea Legal Research Institute](#), [University of Pennsylvania Program on Regulation](#)

December 29: South Korean policymakers amend the Infectious Disease Control and Prevention Act to give the Ministry of Health the authority to collect private data without a warrant from confirmed and suspected patients. Telecommunications companies and the National Policy Agency must also share location information with the health authorities upon request and without a warrant.

Source: [Lawfare](#), [Korea Legal Research Institute](#)

2017

January 17: South Korea enacts the Act on the Promotion of Smart City Development and Industry.

Source: [Korea Law Translation Center](#)

April: The South Korean government launches the Advancement of Smart Quarantine Information System, which utilizes overseas roaming data to identify people entering the country from high-risk regions and monitors them during the incubation period of infection.

Source: [South Korea Ministry of the Interior and Safety](#)

August 1: South Korea establishes an emergency use authorization policy to permit the government to use unapproved diagnostic test kits when approved diagnostic kits are not available.

Source: [Korea Legislation Research Institute](#), [University of Pennsylvania Program on Regulation](#)

2018

January 2018: South Korea initiates the National Strategic Smart City program, which aims to develop a standardized open architecture of City Data hub. It is a cloud-based open data hub to collect, store, process, analyze, and publish the cross-functional data in a holistic way, covering the domains of mobility, energy, environment, healthcare, and safety. (The City Data Hub later powered the COVID-19 Data Platform.)

Source: [South Korea Ministry of the Interior and Safety](#)

March 13: South Korea amends the Medical Devices Act to promote public-private medical partnerships.

Source: [Korea Legislation Research Institute](#), [University of Pennsylvania Program on Regulation](#)

2019

December: South Korea's Ministry of the Interior and Safety begins providing translated emergency disaster texts, transmitted from the central and local governments in cooperation with the Korea Tourism Organization. Residents who receive COVID-19 emergency texts can check if they have been anywhere that overlaps with the movement of a confirmed patient, allowing them to get tested quickly if necessary.

Source: [South Korea Ministry of the Interior and Safety](#)

2020

January 20: South Korea raises the alert level to Yellow (level 2 out of a 4-level national crisis management system).

Source: [South Korea Ministry of Health](#)

January 27: South Korea raises the alert level to Orange (level 3 out of a 4-level national crisis management system).

Source: [Yonhap](#)

February 4: South Korea begins banning entry of all foreign nationals who had been to Hubei Province, China, in the previous two weeks.

Source: [The Korea Herald](#)

February 12: All travelers from China are required to install a self-diagnosis mobile application upon entry into the country. An inbound traveler who does not install the mobile application or fails to submit their daily health conditions will be tracked through the self-diagnosis mobile system, which receives immigration and visa information from the South Korean government as well as airline and passenger data.

Source: [South Korea Ministry of the Interior and Safety](#)

February 12: South Korea approves emergency use of a diagnostic kit developed by South Korean biotech company KogeneBiotech, just one month after the release of the COVID-19 genetic sequence on January 12. Seoul provided R&D funding to three out of a total of five companies that obtained emergency use approval for the development of diagnostic kits.

Source: [South Korea Ministry of the Interior and Safety](#)

February 20: South Korea records its first COVID-19 death, and cases reach 100.

Source: [The Korea Herald](#)

February 21: The South Korean government declares a "Special Management Region" in Daegu and Cheongdo.

Source: [Imperial College COVID-19 Response Team](#)

February 23: South Korea raises the alert level to Red (level 4 out of a 4-level national crisis management system).

Source: [BBC News](#)

March 3: The South Korean Government declares a “Special Management Region” in Gyeongsan.

Source: [Imperial College COVID-19 Response Team](#)

March 12: The South Korean government announces fast-track support measures for companies responding to COVID-19. Seoul will continue implementing the National Strategy for Artificial Intelligence, announced in December 2019, to encourage creativity of the private sector for effectively responding to similar crises in the future.

Source: [South Korea Ministry of the Interior and Safety](#)

March 16: South Korea begins a ten-day pilot of The COVID-19 Data Platform as part of its National Strategic Smart City R&D Program, before launching the data platform on March 26. It is designed to support epidemiological surveyors to quickly identify the transmission routes and places that infected people have visited by using real-time data analytics.

Source: [South Korea Ministry of the Interior and Safety](#)

March 19: South Korea’s special entry procedures now apply to anyone traveling from Europe, and the government considers extending the policy to all countries. The policy also applies to South Korean citizens returning from abroad.

Source: [Yonhap](#)

March 21: South Korean Prime Minister Chung Sye-kyun announces a campaign to encourage voluntary public compliance with social distancing measures, without imposing lockdowns or restrictions on movements.

Source: [The Korea Herald](#), [Yonhap](#)

March 23: South Korea’s Minister of National Defense Jeong Kyeong-doo stresses the need for a “defense posture against non-conventional security threats.” Jeong says the role of the military on a defense level has become increasingly important in protecting the safety and lives of the people from nonconventional security threats, such as infectious disease. Jeong asks the Armed Force CBR Defense Command to strengthen its mission posture to minimize damage by securing specialized equipment and supplies in preparation for the occurrence of any infectious disease similar to biological warfare.

Source: [South Korea Ministry of National Defense](#)

March 26: Seoul launches a contact tracing program that takes just 10 minutes to trace people who may have been exposed to the novel coronavirus. It was co-developed by the Land Ministry, the Ministry of Science and ICT, and the South Korea Centers for Disease Control and Prevention. Previously, contact tracing took about 24 hours.

Source: [The Korea Herald](#)

March 31: South Korea's Vice Health Minister Kim Gang-lip says the coronavirus fight plan will largely remain noncompulsory. On instances of safety infractions, Kim says the ministry will speak with the South Korea Centers for Disease Control and Prevention to review legal grounds for action.

Source: [The Korea Herald](#)

April 1: South Korea implements a mandatory 14-day isolation on all arrivals, including citizens, and requires all arrivals to download the self-quarantine safety mobile application. The app allows users to monitor their conditions and self-diagnosis, and ensures that the self-quarantine orders are kept by setting off an alarm when a user ventures out from the designated quarantine area. The app is voluntary for those living in South Korea. By April 13, about 91.4 percent of those under self-quarantine had installed it.

Source: [The Korea Herald](#), [South Korea Ministry of the Interior and Safety](#)

April 1: The South Korean government makes data on levels of foot traffic available to researchers conducting predictive research on the spread of COVID-19, in partnership with KT Corporation, South Korea's telecommunications company. Government health and epidemiological statistics are also provided to researchers. The government is making efforts to establish a research network composed of relevant agencies and researchers to facilitate the sharing of data and research needed for COVID-19 forecasting.

Source: [South Korea Ministry of the Interior and Safety](#)

April 2: South Korea announces plans to invest \$175 million in vaccine research and development over the next ten years, with a focus on COVID-19, tuberculosis, hepatitis A, and hand-foot-and-mouth disease. The Ministry of Health and Welfare said the money will be spent throughout the entire cycle of vaccine development, starting in July 2020.

Source: [The Korea Herald](#)

April 29: South Korea's military postpones regular training for the country's 2.75 million reserve forces for a third time since the start of the pandemic.

Source: [Yonhap](#)

May 6: South Korea's government announces it will prioritize the creation of civil service jobs on data management and disaster prevention in the second half of 2020.

Source: [Yonhap](#)

May 10: President Moon Jae-in announces improvements to infectious disease preparedness, including upgrading the Centers for Disease Control and Prevention to the Disease Control and Prevention Administration to bolster its expertise and independence.

Source: [Yonhap](#)

May 20: The Seoul Metropolitan Government announces plans to make Seoul a model city and the world's standard for infectious disease response.

Source: [Seoul Metropolitan Government](#)

June 2: Seoul mayor Park Won-soon suggests the creation of an intercity network of municipal governments to combat infectious diseases, during a meeting with mayors of 42 international cities. The proposed network would help facilitate rapid, transparent information-sharing and exchanges of goods and people among cities.

Source: [The Korea Herald](#)

June 2: A military surgeon from South Korea's Armed Forces Medical Command develops a new "COVID-19 CheckUp" application, which is expected to be effective in the medical field, domestically and overseas.

Source: [South Korea Ministry of National Defense](#)

June 5: President Moon asks policymakers to reconsider a proposed plan to transfer control of the Korea National Institute of Health from the Korea Centers for Disease Control and Prevention to the Ministry of Health and Welfare. His call came amid controversy over the government's plan to revise the Government Organization Act unveiled by the Ministry of the Interior and Safety on June 4.

Source: [Yonhap](#)

June 15: The South Korean government and the ruling party agree to grant more power to South Korea's CDC, elevating it to an independent administrative body with the power to handle its own budget and personnel matters. Previously, KCDC had been an organ of the Ministry of Health and Welfare. The KCDC will retain control of South Korea's NIH.

Source: [Yonhap](#)

June 16: South Korea's public health authorities warn of the persistent danger of the novel coronavirus spreading widely in the Seoul area, even as the country records its lowest number of locally transmitted infections in two weeks.

Source: [The Korea Herald](#)

July 19: South Korea reports its smallest daily jump in local COVID-19 transmissions in two months. Health authorities express optimism that the outbreak is being brought under control.

Source: [Associated Press](#)

Biosecurity Legislation in South Korea

1995: Prevention of Contagious Diseases Act: This law improves and promotes national hygiene in preventing an outbreak and the prevalence of a contagious disease.

Source: [South Korea National Law Information Center](#)

1996: Act on the Prevention of Contagious Animal Diseases: This law contributes to the development of the livestock industry and to the improvement of public health by preventing the outbreak and spread of contagious livestock diseases.

Source: [South Korea National Law Information Center](#)

1996: Quarantine Act: This law maintains and protects public health by providing for matters concerning the procedures for quarantining the means of transport, persons, and cargo, all of which enter and depart from the Republic of South Korea; and matters concerning the measures for prevention of infectious disease in and out of the Republic of South Korea.

Source: [South Korea National Law Information Center](#)

2010: Infectious Disease Control and Prevention Act: This law contributes to the improvement and maintenance of citizens' health by preventing the occurrence and prevalence of hazardous communicable diseases, and prescribing necessary matters for the prevention and control thereof.

Source: [South Korea National Law Information Center](#)

2016: Rare Disease Management Act: This law reduces individual and social burden caused by rare diseases and contributes to improving public health and welfare by setting and implementing comprehensive policies on the prevention, treatment, research, etc. of rare diseases.

Source: [South Korea National Law Information Center](#)

2017: Act on the Promotion of Collection, Management, and Utilization of Pathogen Resources: This law contributes to the development of the healthcare industry and the national economy by promoting the collection, management, and utilization of pathogen resources.

Source: [South Korea National Law Information Center](#)

NEW ZEALAND

New Zealand's response to COVID-19 is widely regarded as one of the most effective worldwide. In August 2020, the country's mortality rate was the second lowest of those examined in this study with only 0.45 deaths per 100,000 people, and one of the lowest of all democratic nations. The percent positive rate never exceeded 2.7 percent, and stood at 0.3 percent at the time of writing, the lowest in the world.²⁰ Under Prime Minister Jacinda Ardern, New Zealand had limited the number of new cases to under five per day since May 2020, and in the following months, the government has since would remove nearly all domestic restrictions. The country's initial success came from its rapid response to the outbreak and Ardern's bold commitment to an elimination strategy, which saw the government impose strict lockdowns, quickly close its borders, and make significant investments in containment and treatment.

In its first action to prevent the outbreak in the country, New Zealand barred travelers from mainland China in early February 2020. This rapid action—which the government took weeks before many other countries barred travelers from China—demonstrated the urgency with which the government of New Zealand responded to the COVID-19 crisis. Following restrictions on international travel, New Zealand turned its attention inward, implementing strict internal measures that mandated quarantines and provided economic assistance.

Though it lacks the massive economic or scientific capabilities of other nations, New Zealand has benefited from a smaller population and a fast-acting, well-prepared government. In response to the H1N1 pandemic in 2009, New Zealand adopted a comprehensive framework for handling pandemics, which were adhered to in its COVID-19 efforts. Through government-mandated mobilization of personal protective equipment, widespread testing as soon as the first cases were reported, and effective contact tracing, New Zealand followed its established guidelines for public health emergencies and saw positive results in the early days of the pandemic. The government adhered to the science of how the virus spread in order to limit the danger to its population at every turn. New Zealand also benefited from high citizen compliance with its strict lockdown policies, including citizens even reporting lockdown violations to the police. Ardern's framing of the mandatory lockdowns as short in duration and necessary for shared civic interest garnered high levels of public support and trust in her government's ability to manage the crisis, despite New Zealand's highly individualistic culture.

In terms of reopening, New Zealand opted for a gradual four-tier system, in contrast to some countries that opened faster and saw infection spikes after initial lockdowns as a result. Although New Zealand lifted stay-at-home orders and limitations on social gatherings, the government continued to monitor, prepare, and invest time and money into its COVID-19 response. Many watching from abroad wondered how this relatively small nation became the envy of the world for its swift, efficient, and undeterred response to the virus. While the country's relatively small size and position as an island nation certainly worked in its favor,

²⁰ Australia and New Zealand both have 0.3 percent positive rates, the lowest among all countries with recorded data.

it was New Zealand's urgency, honesty, and strong action that allowed the government to prevent its healthcare system from being overrun, to reduce greatly the loss of life, and to minimize the economic and social impacts on its population.

I think we need to be a bit more explicit about which of the four measures we're tracking New Zealand followed in order for it to be one of the best performing countries.

New Zealand's Biosecurity Timeline

From the early 1990s through the present day, New Zealand has been perfecting its biosecurity legislation and emergency response procedures. During the 2009 H1N1 pandemic, New Zealand refined its border management processes, which became critical in the country's early containment of Covid-19. New Zealand was among the first countries to ban travelers from mainland China in early February, several weeks prior to its first case. The government committed to Prime Minister Jacinda Ardern's promise to eliminate COVID-19, all while managing the economic and social impacts of the virus, and working towards the development of treatment and vaccines.

1991

December: The New Zealand sentinel GP surveillance system is established by the World Health Organization Global Program for Influenza Surveillance. This system tracks the number of influenza cases and continues to be the primary monitoring system for respiratory illness through 2020.

Source: [CDC](#)

2003

New Zealand's Cabinet assigns accountability to the Ministry of Agriculture and Farming (MAF) for the full management of the biosecurity system, which included a leadership role in establishing new structures, capabilities, and systems to support a "whole-of-biosecurity focus." A Biosecurity Strategic Unit within MAF is established.

The Biosecurity Chief Executives Forum is established. A memorandum of understanding clarifies roles of the agencies responsible for biosecurity: the Department of Conservation, Ministry of Fisheries, Ministry of Health, and the MAF. In addition, the Biosecurity Central/Regional Government Forum is established, which improves coordination and collaboration across central and regional governments on biosecurity issues.

An annual Biosecurity Summit is launched in 2003, and it continues until 2008. Around 250 people attend each year, including representatives from central, regional, and local governments, as well as importers and exporters, industry, research institutes, the science community, pest management companies, and community groups.

Source: [Government of New Zealand](#)

2004

The Biosecurity Integrated Risk Management Framework is developed. It is used as a support tool to guide decisions surrounding resource allocation in managing biosecurity risks.

Source: [Government of New Zealand](#)

November: Biosecurity NZ is established, as a “business unit” within the Ministry of Agriculture and Farming, accountable for the biosecurity system. A Public Awareness Campaign plan is developed to increase general awareness of biosecurity.

Source: [Government of New Zealand](#)

2005

The Biosecurity Ministerial Advisory Committee is established as a stakeholder advisory body, with members appointed by the Minister for Biosecurity. The advice is intended to address environmental, economic, human health and social and cultural outcomes.

Source: [Government of New Zealand](#)

2007

Biosecurity NZ releases a five-year strategic plan. The Border Sector Governance Group is established, comprising of the Chief Executives of Customs, MAF, Biosecurity NZ, DOL, Immigration NZ, NZFSA, DIA, and MOT (also representing Crown Aviation Security Service and Maritime NZ). This Group develops the Border Sector Strategy 2008-2013, to provide a border management system that facilitates travel and trade while minimizing risk.

An Information Technology Initiatives project is established to improve information systems at the border. It includes harmonizing information systems between the Quarantine Service and Customs.

The government releases a Biosecurity Science Strategy, which better integrates science into policy and strategy.

Biosecurity NZ releases a Communications Strategy, designed to shift public focus from awareness of biosecurity issues to behavioral change and participation.

Source: [Government of New Zealand](#)

2008

The Border Sector Governance Group issues the Border Sector Strategy 2008-2013. It sets out the key areas of focus for development of a more integrated and responsive border management system.

Source: [Government of New Zealand](#)

2009

The Biosecurity Foresight Project begins, described as a “horizon scan” involving interagency workshops to identify emerging issues to inform biosecurity strategic decision-making. In addition, the Biosecurity Response Knowledge Base is developed as an online information repository of procedures, standards, and tools for managing biosecurity responses.

A review of the Biosecurity Act 1993 begins, leading to the passage of the Biosecurity Law Reform Act in 2012.

Research finds that biosecurity is a very important issue among the general public, ranking second out of 11 issues. Reducing domestic violence is the leading issue.

Source: [Government of New Zealand](#)

April 25: The first cases of H1N1 in New Zealand emerge.

Source: [CDC](#)

April 25 - June: To limit the spread of H1N1, the New Zealand government focuses on border management and follow-ups with symptomatic international travelers and their immediate contacts. It also enforces controls at international airports, which delays community transmission.

Source: [The New Zealand Medical Journal](#)

2010

The Border Sector Ministerial Group is established, which includes the Minister for Biosecurity, to provide strategic leadership and direction. It meets every six weeks to consider border sector issues that intersect with biosecurity. A Border System Manual is developed, which serves as a “guidebook” describing the biosecurity system as a whole, explains MAF’s border risk management system, and clarifies roles, responsibilities, policies, and procedures.

Biosecurity NZ publishes the Border Directions Statement 2010-2015, and Post-Border Directions Statement 2010-2015, which are both supported by implementation plans and aligned with the broader Biosecurity NZ Strategic Plan.

Source: [Government of New Zealand](#)

April: New Zealand’s Ministry of Health publishes the 193-page “New Zealand Influenza Pandemic Plan: A framework for action,” which addresses the government response that pandemics require. The plan places the Ministry for Primary Industries as the lead government agency in biosecurity issues.

Source: [Ministry of Health](#)

2012

The Ministry for Primary Industries becomes the agency responsible for biosecurity leadership, and the Biosecurity NZ brand is retired. The Ministry releases an Information Systems Strategic Plan that details how information technology will support the biosecurity mission over the next five years.

Regional councils establish a Bio Managers Group and a Biosecurity Working Group, comprised of biosecurity managers and senior technical and policy staff.

Source: [Government of New Zealand](#)

September: The Biosecurity Law Reform Act passes, updating the existing Biosecurity Act 1993. It strengthens enforcement tools, sets up the Government Industry Agreement on Biosecurity Readiness and Response, and supports improvements in the way the biosecurity system is managed. [For more information, see the “Biosecurity Legislation in New Zealand” section.]

2013

The Office of the Auditor General conducts a performance audit to examine how effectively the biosecurity system works in preparing for and responding to “biosecurity incursions.” It finds that the Ministry for Primary Industries responds well to incursions and has high-trust relationships with key stakeholders, but there is a need for improved performance reporting.

The Centre of Excellence for Biosecurity Risk Analysis is established as a joint initiative between MPI, the University of Melbourne, and the Australian Federal Department of Agriculture to provide practical solutions and advice related to biosecurity risk management. Additionally, the government invests \$25.8 million over five years for science investment in biosecurity and biodiversity research.

MPI leads a cross-stakeholder project to improve understanding of visitors’ behavior and issues with voluntary compliance with New Zealand’s biosecurity regulations. This project informs the development of initiatives to encourage voluntary compliance.

Source: [Government of New Zealand](#)

2014

The Ministry for Primary Industries establishes a Biosecurity Governance Board, which is responsible for accountability and ensuring effective performance of the biosecurity system. It begins work on developing biosecurity performance standards.

The Border Compliance Social Marketing Programme Strategy is developed to encourage behavior change in travelers to ensure their voluntary compliance with biosecurity regulations, using a range of interventions and social marketing.

Source: [Government of New Zealand](#)

2017

August 4: The New Zealand Influenza Pandemic Plan is updated, refining the government approach to pandemic planning and preparation as well as the different phases of a pandemic action plan.

Source: [Ministry of Health of New Zealand](#)

November 22: The government strengthens national public health leadership and places extra emphasis on surveillance outside of notifiable diseases.

Source: [Wiley Online Library](#)

2020

January 24: New Zealand's Ministry of Health sets up a team to monitor the novel coronavirus situation, saying the current risk is low.

Source: [New Zealand Ministry of Health](#)

January 28: Prime Minister Jacinda Ardern issues an Infectious and Notifiable Diseases Order, to go into effect on January 30, which amends Schedule 1 of the Health Act 1956 to include the "novel coronavirus" to the list of diseases. This gives officials the power to quarantine people, if necessary.

Source: [New Zealand Parliamentary Council Office](#)

February 3: New Zealand temporarily bans entry of foreigners from, or who have travelled through, mainland China. Homecoming New Zealanders are exempt but must self-isolate for two weeks.

Source: [New Zealand Doctor](#)

February 7: The Ministry of Health sets up a free telephone number for questions related to Covid-19.

Source: [NewstalkZB](#)

February 24: The February 3 ban on entry of foreigners traveling from China is extended for an additional eight days. PM Ardern states that it is "highly likely" COVID-19 will reach New Zealand. She announces that New Zealand had secured a national supply of anti-virals and 18 million masks ready for distribution in case of a pandemic.

Source: [RNZ](#)

February 28: The first confirmed case of COVID-19 in New Zealand is reported to the Ministry of Health. The person had traveled to Iran and returned to New Zealand on February 26, through Indonesia. The government extends travel restrictions to include those coming from Iran.

Source: [New Zealand Doctor](#), [The Guardian](#)

March 14: PM Ardern announces that all travelers must self-isolate for 14 days, including returning New Zealanders, as New Zealand logs six confirmed cases. The government will review the restrictions in 16 days.

Source: [BBC News](#), [Newshub](#)

March 19: New Zealand officially closes its borders to limit the spread of COVID-19. All events of more than 100 people are ordered to be cancelled.

Source: [NPR](#)

March 21: The government introduces a [four-tiered alert system](#) to manage COVID-19 (Prepare, Reduce, Restrict, Eliminate). New Zealand is at Level 2. People over 70 are instructed to stay at home.

Source: [1News](#), [New Zealand Doctor](#)

March 23: New Zealand announces a month-long, nationwide lockdown, moving into Level 3 of the four-tier system. 36 new cases are announced. There are now a total of 102 confirmed cases.

Source: [New Zealand Doctor](#), [BBC News](#)

March 24: Parliament's Covid-19 Ministerial Group passes the COVID-19 Response (Taxation and Social Assistance Urgent Measures) Bill, which aims at assisting the government's response to the economic impact of COVID-19. The Ministry of Health invests \$500 million in the set-up of New Zealand's National Close Contact Service (NCCS), a new contact tracing workforce.

Source: [New Zealand Parliament](#), [Ministry of Health](#)

March 25: The government declares a State of National Emergency, imposing a strict four-week nationwide lockdown.

Sources: [National Crisis Management Centre](#)

April 6: The number of new cases begins to decrease each day. It drops from 89 on April 5 to 18 by April 12.

Source: [Newshub](#)

April 7: Recoveries outnumber new cases, with 65 recoveries and 54 new cases.

Source: [Newshub](#)

April 17: The number of new cases drops below 10 for the first time.

Source: [Newshub](#)

April 20: Ardern extends the lockdown by five days.

Source: [CNN](#)

April 27: Ardern announces that New Zealand has stopped community transmission of the virus, but requested that citizens remain vigilant as the authorities discover the remaining cases. She describes the virus as effectively "eliminated," moving New Zealand out of its most extreme phase of social restrictions. New Zealand has reported fewer than 1,500 confirmed or probable cases, and 19 deaths.

Source: [BBC News](#)

May 4: No new cases are recorded for the first time since the beginning of March.

Source: [Newshub](#)

May 25: New Zealand commits \$37 million to promote vaccine production in the country, global research efforts, and global vaccine distribution.

Source: [Global Citizen](#)

May 26: Leader of the House Chris Hipkins announces that the House has passed a motion to disband the special Epidemic Response Committee (ERC), after it had successfully served its role to scrutinize the government during the levels three and four of the lockdown.

Source: [beehive.govt](#)

May 27: New Zealand launches the healthcare app Āwhina, which allows healthcare workers to access information about COVID-19. This app follows its NZ COVID Tracer app, launched on May 20, which works as a “digital diary” in which individuals can mark places they go to.

Source: [HealthcareITNews](#), [NewsHub](#)

June 3: Ardern announces impending Level 1 rules. Significant movement restrictions will end, but New Zealand’s border will remain closed except for citizens.

Source: [RNZ](#)

June 4: New Zealand has 20 consecutive days of no new cases.

Source: [The Conversation](#)

June 8: New Zealand no longer has any active cases of COVID-19.

Source: [BBC News](#)

June 11: All of New Zealand is declared Alert Level 1, as restrictions on gatherings are lifted.

Source: [Ministry of Health of New Zealand](#)

June 16: New Zealand reports new cases after 24 days without the emergence of a new case. Prime Minister Ardern appoints Air Commodore Digby Webb, the Assistant Chief of Defense, to oversee all quarantine and managed isolation facilities after health officials permitted two women who had recently returned from London to leave isolation early.

Source: [New York Times](#), [Associated Press](#)

June 23: The government imposes a new testing regime at the border and for travel. Health Minister David Clark says air crews on “high risk” routes (such as trips to the United States) will be tested and possibly subjected to isolation.

Source: [New Zealand Herald](#), [Minister of Health Press Release](#)

June 29: Health Minister David Clark reports that the government is investing an additional \$150 million for PPE for frontline health workers from the COVID Response and Recovery Fund.

Source: [Beehive.govt Press Release](#)

July 2: New Zealand’s Health Minister David Clark resigns after facing criticism. He had previously breached lockdown rules to take his family to the beach.

Source: [BBC News](#)

July 7: New Zealand limits returning citizens to reduce the burden on quarantine facilities. The national airline will not take new bookings for three weeks.

Source: [Reuters](#)

July 15: Prime Minister Jacinda Ardern says New Zealand must prepare for new coronavirus outbreaks, but will continue its strategy of elimination if community transmission is discovered. The government releases a new framework on how it will fight the virus in the event of new cases.

Source: [Reuters](#)

Biosecurity Legislation in New Zealand

1956: Health Act of 1956: Established by the Ministry of Health, this act creates much of the public health infrastructure of New Zealand while also regulating wildlife sales, drinking water, and environmental issues. This law also establishes the framework to monitor and combat infectious diseases and public health emergencies.

Source: [New Zealand Legislation](#)

1993: Biosecurity Act of 1993: New Zealand cites the purpose of this act as the “exclusion, eradication, and effective management of pests and unwanted organisms.” The Act created border controls, surveillance capabilities, and control and eradication resources for organisms or diseases already inside the country.

Source: [New Zealand Legislation](#)

2002: Civil Defence Emergency Management Act 2002: The CDEM Act coordinates local groups preparedness with the “4Rs” (reduction, readiness, response, and recovery), improves sustainable management of hazards, employs risk reduction management practices, and creates coordination infrastructure between national and local plans and different agencies.

Source: [New Zealand Legislation](#), [New Zealand Legislation](#)

2002: Local Government Act 2002: This act enables Civil Defence Emergency Management Groups to attend meetings by audio link or audio-visual link.

Source: [New Zealand Legislation](#)

2006: Epidemic Preparedness Act: This law grants special powers to the Prime Minister in the event of an epidemic, either in New Zealand or overseas. This law is designed to streamline the response of the government during an epidemic and allow for rapid action.

Source: [New Zealand Legislation](#)

2006: Immigration Amendment Act: This provides the groundwork for immigration to be more carefully analyzed or even halted during an epidemic.

Source: [New Zealand Legislation](#)

2012: The Biosecurity Reform Act of 2012: This act updates New Zealand’s biosecurity system from the initial act passed 15 years prior. The new bill focuses on cooperation and collaboration both with other nations and with private industry. It introduces “joint decision-making on newly detected harmful organisms,” information-sharing partnerships between neighbors and allies, and government-industry agreement on sharing the cost of addressing biosecurity.

Source: [New Zealand Legislation](#)

Coronavirus Legislation

2020: COVID-19 Public Health Response Act 2020: The legislation provides a new legal framework for making and enforcing orders imposing restrictions and requirements on businesses and people in order to contain the spread of COVID-19. The act allows the minister of health and the director-general of health to make various orders regarding social distancing, isolation, and quarantines with approval from the House of Representatives.

Source: [New Zealand Legislation](#)

2020: Covid-19 Response Legislation Act 2020: This legislation helps business and local governments manage the impact of COVID-19. It includes debt hibernation, extending statutory deadlines, providing relief for select rules, changes to property laws, parental leave, and enabling a fast track of legislation to respond efficiently to the public health crisis and mitigate the societal impact.

Source: [New Zealand Legislation](#)

CHINA

By August 2020, China appeared to have largely contained the spread of COVID-19 within its borders, with a very low reported mortality rate of only 0.34 deaths per 100,000 people. Given the country's history of concealing infectious disease outbreaks, China may have underreported infections and deaths from COVID-19. Still, the country has demonstrated its capacity to lead an impressive domestic response.²¹ The Chinese government under President Xi Jinping built two hospitals in just ten days at the heart of the outbreak in Wuhan, and acted quickly to reimpose restrictive measures in response to subsequent infection spikes in Beijing.²² However, the government's failure to prevent the emergence of COVID-19 and notify the international community in a timely, transparent manner contributed significantly to the rapid spread of the virus around the world. This failure of the Chinese government caused devastating health, economic, social, and security implications associated with its spread.

The Chinese government's early success in combating COVID-19 within China can be attributed to a high degree of state control over the population, the country's communal mindset, and its position as a global manufacturing hub for medical supplies. China's historic experience with epidemics, most notably SARS in 2003, has led Beijing to enact new legislation and amend existing regulations that give the state broad powers during national public health emergencies. Such powers enabled President Xi to rapidly mobilize China's military and police forces, which took control of medical facilities nationwide, shut down cities and outbreak areas, and conducted effective non-military logistics operations on an unprecedented scale in response to COVID-19. As a communally-oriented society, the Chinese population has been primed to value the needs of the greater community. While China has imposed its containment measures with military and police force, it is likely that this communal mindset motivates people to not only follow government orders, but also to make voluntary behavioral changes for the health and safety of their communities.

Despite its success in containing the virus, however, mistakes were made in preventing its global spread. The government actively stifled doctors and other medical practitioners who

²¹ Erik Eckholm, "THE SARS EPIDEMIC: EPIDEMIC; China Admits Underreporting Its SARS Cases," *The New York Times*. April 21, 2003. Available from <https://www.nytimes.com/2003/04/21/world/the-sars-epidemic-epidemic-china-admits-underreporting-its-sars-cases.html?login=email&auth=login-email>; Nick Wadhams and Jennifer Jacobs, "China Concealed Extent of Outbreak, U.S. Intelligence Says," *Bloomberg*. April 1, 2020. Available from <https://www.bloomberg.com/news/articles/2020-04-01/china-concealed-extent-of-virus-outbreak-u-s-intelligence-says>; "China's data reveal a puzzling link between COVID-19 cases and political events," *The Economist*. April 7, 2020. Available from <https://www.economist.com/graphic-detail/2020/04/07/chinas-data-reveal-a-puzzling-link-between-COVID-19-cases-and-political-events>.

²² Jessica Wang, Ellie Zhu, and Taylor Umlauf, "How China Built Two Coronavirus Hospitals in Just Over a Week," *Wall Street Journal*. February 6, 2020. Available from <https://www.wsj.com/articles/how-china-can-build-a-coronavirus-hospital-in-10-days-11580397751>; Ramy Inocencio, "China races to contain a second wave of coronavirus in Beijing," *CBS News*. June 17, 2020. Available from <https://www.cbsnews.com/news/china-coronavirus-beijing-second-wave-surge/>; Han Huang, "Beijing's coronavirus outbreak," *South China Morning Post*. June 24, 2020. Available from <https://multimedia.scmp.com/infographics/news/china/article/3090290/beijing-coronavirus-outbreak/index.html>.

warned of the spread of the virus early on. And despite global criticism of Beijing's lack of transparency during the SARS epidemic, it nonetheless displayed similar tendencies with COVID-19.

Given the exceptional global impact of COVID-19 and China's central position, a debate on the future of biosecurity in China has emerged among Chinese lawmakers, policymakers, and military leaders. Many now advocate for improved emergency response mechanisms and closer civil-military cooperation. While these are valuable goals, China has a demonstrated capacity to successfully contain a novel infectious disease outbreak. Instead, Beijing should focus more heavily on measures to prevent novel diseases from occurring in the first place. This may involve challenging cultural norms surrounding lab security as well as food production and consumption; implementing more stringent health regulations across industries; and perhaps most critically, increasing transparency and international collaboration at a time of strained relations between China and the international community.

China's Biosecurity Timeline

This timeline begins in late 2002, with the outbreak of Severe Acute Respiratory Syndrome (SARS) in China. The Chinese government came under fire for its lack of transparency in alerting the international community to SARS, and later, for intentionally underreporting the number of cases and deaths due to SARS. Though new legislation improved emergency management procedures, Beijing's dishonest handling of the SARS outbreak foreshadowed its response to COVID-19. Events from the reporting of COVID-19 in late December through the time of this report suggest that, though China failed to prevent the emergence of the novel coronavirus, it was largely prepared to contain the outbreak, particularly through the mobilization of its armed forces at an unprecedented scale. In May 2020, China's national legislature announced that it will prioritize public health legislation through the end of 2020.

2002

November 16: First case of an acute respiratory disease, later named SARS, is reported in Guangdong Province in southern China.

Source: [World Health Organization](#)

2003

February 10: WHO Beijing receives an email describing a panic situation in Guangdong, due to a "strange contagious disease" that had already left more than 100 people dead.

Source: [World Health Organization](#)

February 12: Health officials from Guangdong Province report a total of 305 cases and five deaths from SARS from November 16, 2002, to February 9, 2003.

Source: [World Health Organization](#)

March 10: China's Ministry of Health asks the WHO to provide technical and laboratory support to determine the cause of the Guangdong outbreak.

Source: [World Health Organization](#)

March 17: China provides its first report on the outbreak to the WHO, stating that the outbreak had tapered off. A total of 219 cases and four deaths were reported in Canada, Germany, Taiwan, Thailand, the United Kingdom, Hong Kong, Vietnam, and Singapore.

Source: [World Health Organization](#)

March 26: China reports a total of 792 cases and 31 deaths in Guangdong Province from November 16, 2002 to February 28, 2003. Chinese officials had previously reported only 305 cases and five deaths from mid-November to 9 February.

Source: [World Health Organization](#)

April 18-20: On April 18, WHO Beijing expresses concern over inadequate reporting of SARS cases in Chinese military hospitals. On April 19, China's leaders advise officials not to cover

up cases. On April 20, Beijing authorities announce 339 previously undisclosed cases. Beijing's mayor and China's health minister are removed from their posts.

Source: [World Health Organization](#)

May 7: China's State Council passes the Regulations on Preparedness for and Response to Emergent Public Health Hazards. [See "Biosecurity Legislation" section for more information.]

July 5: The WHO declares that SARS outbreaks have been contained worldwide.

Source: [World Health Organization](#)

2004

December 16: China's Ministry of Health issues Measures for the Administration of Pre-examination and Separation of Patients with Infectious Diseases by Medical Institutions. [See "Biosecurity Legislation" section for more information.]

2007

August 30: China passes the Emergency Response Law and the Law of the People's Republic of China on Animal Epidemic Prevention. [See "Biosecurity Legislation" section for more information.]

2011

January 8: Revision of the Regulation on Responses to Public Health Emergencies. [See "Biosecurity Legislation" section for more information.]

2018

March 18: China creates the [Ministry of Emergency Management](#), which is responsible for compiling and implementing emergency management plans, as well as organizing rescue and relief for disasters and workplace accidents.

Source: [Xinhua](#), [China Daily](#)

2019

March 2: Researchers from the Wuhan Institute of Virology publish "Bat Coronaviruses in China," in which they argue that it is highly likely that future SARS- or MERS-like coronavirus outbreaks will originate from bats, and there is an increased probability that this will occur in China. [MDPI](#)

August: Five hospitals in Wuhan, Hubei Province, China reportedly begin experiencing a 67 percent increase in traffic compared to the previous year, according to Harvard researchers who examined satellite imagery. The Harvard [study](#) was published in June 2020.

Source: [BBC News](#)

October 21: A draft biosecurity law is submitted to China's National People's Congress for deliberation. The draft focused on protecting the country's biological resources, promoting and safeguarding the development of biotechnology, and preventing and prohibiting the use of biological agents or biotechnology that may harm national security.

Source: [Xinhua](#)

December 4: President Xi calls for an improvement in emergency management during a session of the Political Bureau of the Communist Party.

Source: [China Daily](#)

December 28: China passes the Basic Healthcare and Health Promotion Law. [See "Biosecurity Legislation" section for more information.]

December 31: Wuhan Municipal Health Commission reports a cluster of cases of a new pneumonia-like illness, which researchers identify as a new type of coronavirus.

Source: [World Health Organization](#), [New York Times](#)

2020

January 1: Huanan Seafood Wholesale Market in Wuhan is closed after health authorities find that many patients had been operating personnel or customers of the market.

The Wuhan Public Security Bureau has reportedly arrested eight doctors from a Wuhan hospital for spreading "false information" about a new SARS-like virus on the Internet.

Source: [Xinhua](#), [BBC News](#), [Xinhua](#)

January 5: Wuhan Municipal Health Commission reports 59 patients with the unexplained viral pneumonia diagnosis, seven of whom are in severe condition.

Source: [Xinhua](#)

January 7-8: President Xi and other top Chinese leaders discuss the coronavirus outbreak at the meeting of a standing committee of the politburo. The following day, January 8, China's National Health Commission identifies the novel coronavirus.

Source: [BBC News](#)

January 11: China reports its first death from the novel coronavirus. The Wuhan Municipal Health Commission states that 41 cases of pneumonia due to the novel coronavirus have been diagnosed, including seven severe cases and one death.

Source: [Xinhua](#)

January 20-21: The WHO sends a delegation to conduct field research in Wuhan. The delegation states that evidence suggests that human-to-human transmission is taking place.

Source: [BBC News](#)

January 23: Chinese authorities cut off all public transportation to the city of Wuhan, including local and long-distance buses, subways, ferries, flights, and trains. Workers begin construction on two new hospitals in Wuhan.

Source: [China Daily Twitter](#), [New York Times](#), [BBC News](#)

January 24: China's military deploys more than 4,000 medical personnel to Wuhan, on instructions from President Xi. Three hospitals there are placed under military control.

Source: [Xinhua](#), [Xinhua](#)

January 26-30: The Chinese military dispatches a medical force led by Maj. Gen. Chen Wei to Wuhan on January 26. On January 30, a tent-type mobile testing laboratory of the Academy of Military Sciences starts operation on nucleic acid detection and emergency scientific research on related vaccine development.

Source: [Ministry of National Defense](#), [Global Times](#), [China Military Online](#)

February 5: Chinese armaments companies postpone planned work in order to minimize the risk of spreading the novel coronavirus, including those building the country's new aircraft carrier and fighter jets.

Source: [Global Times](#)

February 7: The People's Liberation Army Joint Logistic Support Force issues its first full-scale mobilization order since its establishment in September 2016, calling all personnel, especially medics and procurement specialists, to contribute to response efforts.

Source: [China Daily](#)

February 11: The WHO proposes to name the virus "COVID-19" as the death toll in China exceeds 1,000 and the total number of confirmed cases rises above 44,000. 393 confirmed COVID-19 cases are reported in 24 countries outside of China.

Source: [New York Times](#)

February 13: China's Air Force transport fleet conducts the largest nonmilitary operation in its history, deploying medics and supplies in its third transport mission to Wuhan. It also marks the first nonmilitary deployment of China's Y-20, one of the world's largest strategic heavy-lift transport planes. Aside from the Wuhan mission, 63 military hospitals nationwide are tasked with receiving COVID-19 patients.

Source: [Xinhua](#), [China Military Online](#), [Global Times](#), [China Daily](#)

February 14: President Xi calls for improvements to China's health emergency response system in a meeting with top leadership in Beijing. Xi calls for a review of laws on infectious disease prevention and treatment, as well as wildlife protection.

Source: [South China Morning Post](#)

March 1: China's Defense Ministry holds a press conference on the response to the COVID-19 outbreak. Senior Colonel Wu Qian describes actions the ministry has taken to adapt to the novel coronavirus situation, including: 1) adjusting annual training tasks and safety

protocols, including suspending some large-scale drills; 2) differentiating training procedures based on specific risk levels in local areas; 3) exploring innovative training methods and incorporating digital and smart technologies; and 4) strengthening epidemic prevention measures.

Source: [China Military Online](#)

March 1: The PLA Central Theater Command launches a transportation support team in Wuhan, with 130 trucks and 260 personnel to help move daily necessities. The team has transported more than 8,500 metric tons of goods and 23,600 medical apparatuses.

Source: [China Daily](#), [Xinhua](#)

March 3: The first PLA clinical laboratory for COVID-19 diagnosis and confirmation is approved by the Logistics Support Department of the PLA Military Commission and the Beijing Municipal Health Commission.

Source: [CGTN.com](#)

March 3: Senior Colonel Wu Qian of China's Ministry of National Defense says that China will incorporate biosecurity in its national security system and systematically plan the construction of a national biosecurity risk control and management system. China will also draft a biosecurity law and establish a legal and systematic support system for biosecurity.

Source: [Global Times](#)

March 16: A coronavirus vaccine developed by Dr. Chen Wei's military medical team at the Academy of Military Medical Science receives approval for clinical trials.

Source: [People's Republic of China Ministry of National Defense](#)

March 19: Chinese authorities report zero local infections for the first time since the epidemic began three months earlier. The virus has killed 3,245 people in China.

Source: [New York Times](#)

March 26: The Ministry of National Defense provides an update. The 63 military hospitals designated to treat COVID-19 patients have provided nearly 3,000 beds with more than 10,000 medical personnel. Designated hospitals of the PLA and military medical teams to Hubei have received and treated 7,415 COVID-19 patients, with 5,962 recovered.

Source: [People's Republic of China Ministry of National Defense](#)

April 17: Military medics from the PLA and People's Armed Police Force leave Wuhan after fulfilling anti-virus duties.

Source: [China Daily](#)

April 26: Chinese lawmakers conduct a secondary review of the draft biosecurity law. The first draft of which was deliberated by the top legislature in October 2019.

Source: [Xinhua](#)

May 18: The Logistic Support Department of the Central Military Commission begins a pilot program to entrust civilian agencies with implementing military procurement projects. The

goal is to improve the military's procurement capacity and efficiency by introducing capable civilian forces into military procurement activities.

Source: [China Military Online](#)

May 18: The National Committee of the Chinese People's Political Consultative Conference sets up a fast-track system for handling the nearly 300 proposals related to the epidemic response it has received from political advisers. NPC deputies and CPPCC National Committee members propose the establishment of a mechanism for direct communication between the central and local governments for public health emergencies, and to improve the infectious disease reporting system, which was built after the SARS outbreak in 2003.

Source: [Global Times](#)

May 24: In a meeting with lawmakers from Hubei Province, President Xi stresses the need to reform the disease prevention and control system by improving epidemic monitoring, early warning, and emergency response capacity; perfecting the treatment system for major epidemics; and improving public health emergency legislation. He calls for the establishment of a smart, multi-point trigger system for early warning.

Source: [Xinhua](#)

May 25: The Standing Committee of the National People's Congress says it will prioritize public health legislation in 2020. Chairman Li Zhanshu delivers a report that states the Committee will formulate laws on biosecurity, personal information protection, and data security in the remainder of the year.

Source: [Global Times](#)

May 26: President Xi instructs the military to explore methods of carrying out training operations, combat, and other tasks in the presence of regular anti-epidemic measures, during a plenary meeting between the PLA and the People's Armed Police Force at a session of the National People's Congress. Eight deputies to the NPC put forward suggestions on how to improve the response mechanisms for public health emergencies.

Lieut. Gen. Li Yong, commander of the Joint Logistic Support Force, puts forward the following suggestions: 1) establish a military-civilian joint command system for early warning of public health emergencies, epidemic prevention, and control; 2) create an anti-epidemic system for both peacetime and war, incorporating military medical and anti-epidemic emergency forces into the national emergency forces; and 3) establish an integrated military-civilian storage and supply system for strategic materials.

Song Yuanjun, commander of the Heilongjiang Corps under China's Armed Police Force, puts forward two suggestions: 1) establish and perfect a military-civilian information and command platform; and 2) set up a unified production and supply system for both the military and local governments.

Source: [China Daily](#), [China Military Online](#), [China Military Online](#)

For information on budget adjustments, see: [China Military Online](#)

June 7: China's State Council Information Office releases a white paper on China's COVID-19 response, "to keep a record of China's efforts in its own fight against the virus, to share its experience with the rest of the world, and to clarify its ideas on the global battle."

Source: [ABC News](#), [Xinhua](#)

July 30: [China states that it has more than 18,000 people in quarantine due to a spike in COVID-19 cases across the country, with 12,000 of those people located in the western province of Xinjiang.](#)

Source: [NBC News](#)

Biosecurity Legislation in China

1986: Frontier Health and Quarantine Law of the People's Republic of China: This law is formulated to prevent infectious diseases from spreading into or out of China, to carry out frontier health and quarantine inspection, and to protect human health.

Source: [The State Council of the People's Republic of China](#)

1989: Rules for the Implementation of Frontier Health and Quarantine Law: This law describes implementation rules for the 1986 Frontier Health and Quarantine Law.

Source: [People's Republic of China Ministry of Commerce](#)

1989: Law of the People's Republic of China on Prevention and Treatment of Infectious Diseases: This law is enacted in order to prevent, control, and eliminate the occurrence of infectious diseases and to ensure the health of the Chinese people.

Source: [People's Republic of China Ministry of Commerce](#)

2003: Regulations on Preparedness for and Response to Emergent Public Health Hazards: These regulations are formulated for the purposes of effectively preventing, controlling, minimizing, and eliminating emergent public health hazards, safeguarding the health of the public and the safety of their lives, and maintaining normal social order. The regulations include the components of a national emergency preparedness plan.

Source: [National Health Commission of the People's Republic of China](#)

2004: Measures for the Administration of Pre-examination and Separation of Patients with Infectious Diseases by Medical Institutions: These measures are formulated in accordance with the provisions of Art. 52 of the Law on the Prevention and Control of Infectious Diseases (1989), with the goal of regulating the work of medical institutions for their pre-examination and separation of patients with infectious diseases, effectively controlling the epidemic situation of infectious diseases, and preventing cross infection within a medical institution.

Source: [Peking University Center for Legal Information](#)

2007: Emergency Response Law: The purpose of this law is to prevent and reduce the occurrence of emergencies; control, mitigate, and eliminate the serious social harm caused by emergencies; regulate the activities in response to emergencies; protect the lives and property of the people; and maintain national security, public security, environmental safety, and public order. Art. 14 prescribes an active role for the Chinese People's Liberation Army and the Chinese People's Armed Police Force.

Source: [The Supreme People's Court of the People's Republic of China](#)

2007: Law of the People's Republic of China on Animal Epidemic Prevention: The purpose of this law is to strengthen the administration of animal epidemic prevention; prevent, control and eliminate animal epidemics; promote the development of the breeding industry; protect human health; and maintain public health and safety.

Source: [The State Council of the People's Republic of China](#)

2011: Revision of the Regulation on Responses to Public Health Emergencies: The regulation is enacted for the purpose of effective prophylaxis, timely control and elimination of public health emergencies, and safeguarding the physical health and life security of the general public, and to maintain the normal social order.

Source: LawInfoChina.com

2019: Basic Healthcare and Health Promotion Law: The law involves implementing the Health China 2030 initiative, promulgated in October 2016, to push ahead China's ambition to hit key health indicators by the year 2020. Art. 15 mandates that "basic public health services" are to be provided by the state free of charge to enhance the prevention and control of diseases. Art. 20 mandates the creation of a system of infectious disease prevention and control. The law went into effect on 1 June 2020.

Source: [Xinhua](#), [The Lancet](#)

Discussion and Conclusion

Global pandemics present unique challenges to national security, requiring *whole of nation* responses led by competent governments. Unlike many other national security concerns, pandemics affect everyone. People become infected, unemployed, or at the very least, are required to change their behavior to stem the spread of disease. The private sector holds great power and responsibility, particularly the healthcare, hospitality, and tech industries. Finally, at all levels of government, policymakers must make decisions in rapid fashion, despite countless unknowns and an extraordinarily high level of risk. Though local and regional authorities assume critical roles in pandemic response, federal governments carry the burden of devising and implementing national pandemic strategies. Successful strategies bring together every diverse element and fiber of society to combat the disease. Those less successful approaches tend to lean on denial, partisan politics, and international withdrawal.

This report demonstrates that **governance structure**—whether a government is authoritarian or democratic, federal or centralized—**has little bearing on the effectiveness of an early pandemic response**. China and New Zealand have conducted the most successful responses to COVID-19 thus far, despite the former’s authoritarian government and the latter’s democratic form of government.²³ And while, numerous democratic governments have effectively flattened the curve by August 2020, including Germany and South Korea, others, like the United States and the United Kingdom, have failed to effectively counter the spread of COVID-19.²⁴

In addition, the federal or central nature of a government does not seem to have great significance. U.S. President Donald Trump and German Chancellor Angela Merkel both governed in federal systems, in which states have a high degree of independence and power. However, unlike Trump, Merkel guided Germany’s federal states with a national strategy, rather than deflecting responsibility and placing blame onto them.

Strong national leadership has emerged as the most important factor in a successful COVID-19 response. In the early days of the pandemic, two female leaders, German Chancellor Angela Merkel and New Zealand Prime Minister Jacinda Ardern, set the bar high as decisive leaders who put their faith in science and worked across government agencies to coordinate effective and timely domestic responses. Ardern, in particular, stood out among all world leaders by establishing a bold strategy of elimination from the start of the pandemic, which she communicated to her constituents with exceptional skill. South Korean President Moon Jae-in likewise led his country to be a democratic model for the world in pandemic response. And though he rules with an authoritarian hand, Chinese President Xi

²³ Freedom House ranks countries on a global freedom scale, based on their citizens’ access to political rights and civil liberties. China scores 10/100 (not free), while New Zealand scores 97/100 (free). Source: <https://freedomhouse.org/countries/freedom-world/scores>.

²⁴ Lauren Frayer, “India Sets Record for its Daily Coronavirus Count,” *NPR*. July 16, 2020. Available from <https://www.npr.org/sections/coronavirus-live-updates/2020/07/16/891744546/india-sets-new-record-for-its-daily-coronavirus-count>.

Jinping also demonstrated strong command of his government and acted with decisiveness, both essential qualities in crisis management.²⁵

Alternatively, in the United States, the Trump administration elected to disregard the pandemic strategy passed down by previous administrations. President Trump downplayed the threat in the early stages of the pandemic and deflected responsibility onto China and state governors. Furthermore, he disbanded several offices and positions that had been established during previous administrations for the purpose of coordinating interagency responses.²⁶ Similarly, in the United Kingdom, Prime Minister Boris Johnson failed to fully acknowledge the threat of COVID-19 until the pandemic had already spread through the country and overwhelmed the healthcare system. Despite having advanced healthcare systems, both countries were caught up in highly divisive partisan politics, and their leaders were not able to create a shared sense of national purpose in combating the pandemic.

A second factor that proved critical to a successful initial response was the existence of an adaptable **pandemic strategy and implementation plan**. While all of the countries in this study had existing strategies in place, in most cases such strategies were designed to combat pandemic influenza as opposed to a novel coronavirus. As Dr. Ashley Bloomfield, Health Director-General of New Zealand, noted, “It became apparent that if we followed the steps in our pandemic plan, we would go down the track of other countries and not be able to manage the outbreak in our communities. So we had to change tack.”²⁷ A government’s willingness to adapt its existing strategy by passing new legislation and communicating unprecedented policies to the public is a marker of success, and proved to be crucial to New Zealand’s early success in combating COVID-19.

A third factor has been the realistic acknowledgement of societal and cultural factors within the design and execution of the plan. Such factors might include cultural considerations, such as popular opinion on digital privacy. Trust in government also varies considerably from country to country, as does popular sentiment towards government authority. We found individualistic societies more resistant to disruptions to daily life and civil liberties, such as mandatory mask wearing, movement restrictions, or contact tracing. New Zealand, known for its individualistic culture, overcame such limitations due to a high level of trust in Prime Minister Jacinda Ardern and her effective communication with the public. Furthermore, New Zealand made its existing pandemic influenza strategy even more restrictive, recognizing that without such changes, it would not succeed against COVID-19.

²⁵ Vital Interests Podcast, “Just Hierarchies in China and as Model for Other Nations,” The Center on National Security at Fordham Law. May 21, 2020. Available from <https://www.centeronnationalsecurity.org/vital-interests-issue-32-daniel-bell>.

²⁶ Deb Riechman, “Trump disbanded NSC pandemic unit that experts had praised,” *Associated Press*. March 14, 2020. Available from <https://apnews.com/ce014d94b64e98b7203b873e56f80e9a>.

²⁷ “Congratulations, New Zealand for successfully fighting COVID-19 with testing, isolating and treating cases and tracing contacts! This is in line with WHO’s guidance available to countries,” World Health Organization (WHO). July 7, 2020. Available from .