DISCUSSION PAPER SERIES

COVID-19 感染に関する統計分析と政策提言

その 4

Federal Government Policy Response to COVID-19 in the United States

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Abstract

On March 11, 2020, the World Health Organization (WHO) declared the coronavirus disease 2019 (hereafter as COVID-19) a global pandemic. COVID-19 has caused 1.17 billion infection cases and 2.6 million deaths which is the most significant public health crisis since World War II. More than 29 million confirmed cases and 525,000 deaths in the United States, the most of any country, have been reported by March 11, 2020. According to the WHO data, the number of confirmed cases of COVID-19 in the U.S. accounted for more than a quarter of the world. The deaths accounted for more than one-fifth of the world. This paper reviews the predation of COVID-19 in the U.S. from January 20, 2020, at first and highlights U.S. health policy and government responses. With the review of primary data sources and document content analysis in the U.S., this paper aims to clarify the spread of COVID-19 and the policies and strategies adopted by the federal government.

Keywords: COVID-19, federal government's policy, United States

1. Introduction

On March 11, 2020, the WHO characterized COVID-19 as a pandemic. The outbreak of COVID-19 has caused an unprecedented healthcare crisis and a significant disruption to the world's global economic system. In the United States, the first case of COVID-19 infection was identified in Washington State on January 20, 2020. By mid-April, cases had been confirmed in all fifty U.S. states and the District of Columbia and by November in all inhabited U.S. territories.

On March 13, President Trump declared a national emergency, the first response to COVID-19 at the federal government's level. It has been one year since Trump issued a national emergency declaration, and the COVID-19 in the United States is still severe. The number of confirmed cases of COVID-19 in the U.S. accounted for more than a quarter of the world. The deaths accounted for more than one-fifth of the world.

Why is the COVID-19 so raging in the United States? What countermeasures has the government taken in response to this pandemic? This paper presents an overview of the COVID-19 pandemic in the U.S. at first. The response to the COVID-19 pandemic has been defined by the division of power between the U.S. state government and the federal government (Savennah B. et al., 2020). Therefore, this paper then focuses on the federal government's policy and the transition from the Trump regime to the Biden regime.

2. COVID-19 in the United States

2.1 Cases

2.1.1 Four stages of cases

According to the daily cases, the spread of COVID-19 in the United States has experienced four stages (Figure 1). It was first accelerated in late March and reached the first peak around late April. When the growth rate slowed down and began to decrease gradually, the spread began to accelerate again into June and ushered in the second peak at the end of July. Then the growth rate slowed down again and began to decrease gradually, but it still maintained a level that exceeded the first peak. Since November, the number of new confirmed cases every day has exceeded the second peak, and the number of confirmed cases updated daily is continuously setting new records and reached 299,786 on January 2. The change started in mid-January, and the number of new diagnoses per day dropped rapidly, but as of March 8, 2021, the number of new diagnoses in a single day still exceeded the peak of the second wave.

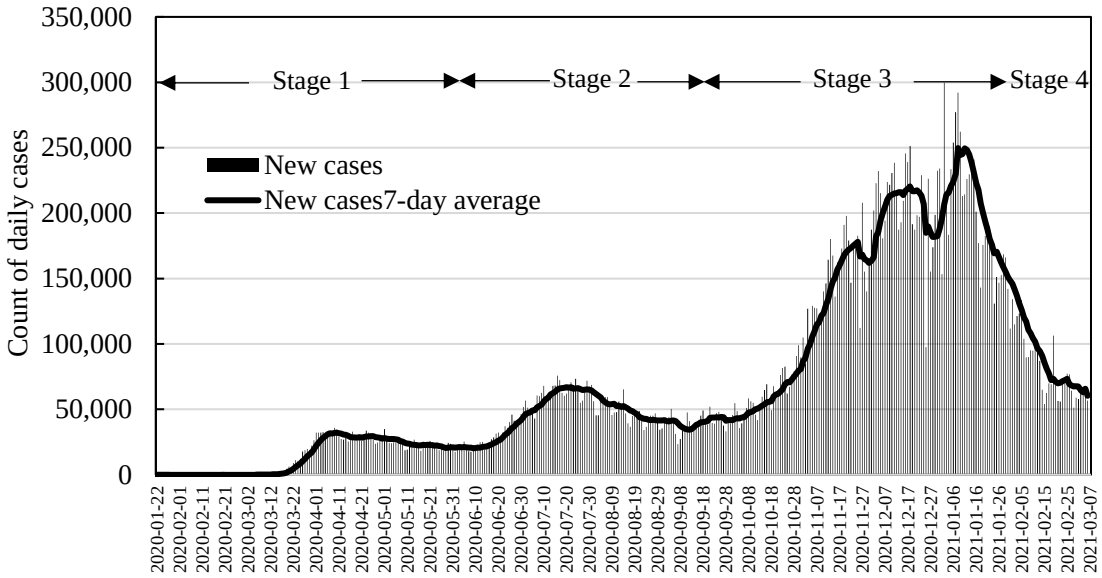

Figure 1 Daily cases of COVID-19 in the United States (20200122-20210307)

Sources: Centers for Disease Control and Prevention (hereafter as CDC) (2021)

2.1.2 Interval days for each increase of 300,000 cases

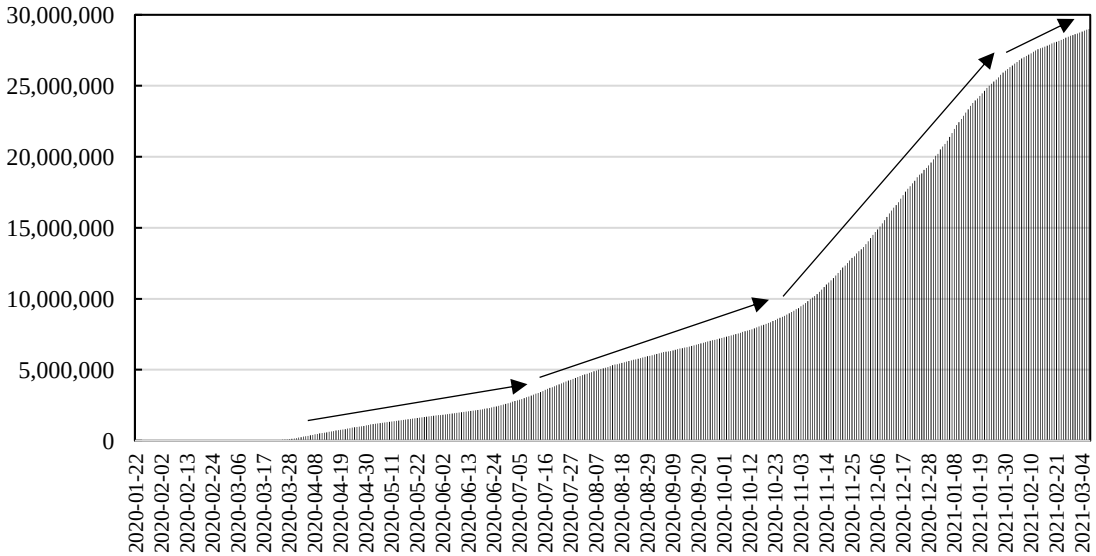

Figure 2 Cumulative cases of COVID-19 in the United States (20200122-20210307)

Sources: CDC (2021)

After the first patient was confirmed on January 22, the virus spread rapidly after entering March after a month or so of latency (Figure 2). The number of people confirmed in the United States for the first time exceeded 1,000 on March 11 and quickly exceeded 10,000 on March 19. The four stages also show various changes in the increasing speed of the cumulative number of confirmed cases. In stage 1, the growth rate is

slower, and stage 2 starts to increase. In Stage 3, the number of confirmed cases increased faster and faster until Stage 4 slowed down.

Table 1 interval days for each increase of 300,000 cases

	Interval Days
0-3,000,000	168
3,000,000-6,000,000	54
6,000,000-9,000,000	60
9,000,000-12,000,000	21
12,000,000-15,000,000	17
15,000,000-18,000,000	14
18,000,000-21,000,000	15
21,000,000-24,000,000	13
24,000,000-27,000,000	21

Sources: CDC (2021)

It is calculated the interval days for each increase of 300,000 cases (Table 1). It took 168 days to reach the first 3 million cases, and it quickly shortened to 54 days when it reached the second 3 million cases. It took 60 days for the third 3 million cases and only 21 days for the fourth 3 million cases. After that, it only took about two weeks for each 3 million cases, and it finally slowed down to 21 days to reach the ninth 3 million cases.

2.2 Tests

2.2.1 Four stages of tests

There were some problems with the initial testing in the United States. CDC began distributing test kits to laboratories on February 5 but stated on the 16th of the same month that most of the previous test results were in doubt. Simultaneously, because the FDA did not approve the test results of private academic institutions, hospitals, and other facilities, the number of tests in the United States in February was deficient. By February 27, 2020, fewer than 4,000 tests had been conducted in the U.S. February 29, 2020, and the FDA finally issued approvals for tests in academic labs and hospitals.

Starting in March, the United States carried out large-scale testing, and the number of tests was maintained at about 1 million per day in early July (Figure 3). As the COVID-19 becomes severer than before, the number of tests has also increased. By late November, the number of tests per day increased to about 2 million. These tests gradually declined in late January 2021, and the tests fell to about 1 million in March.

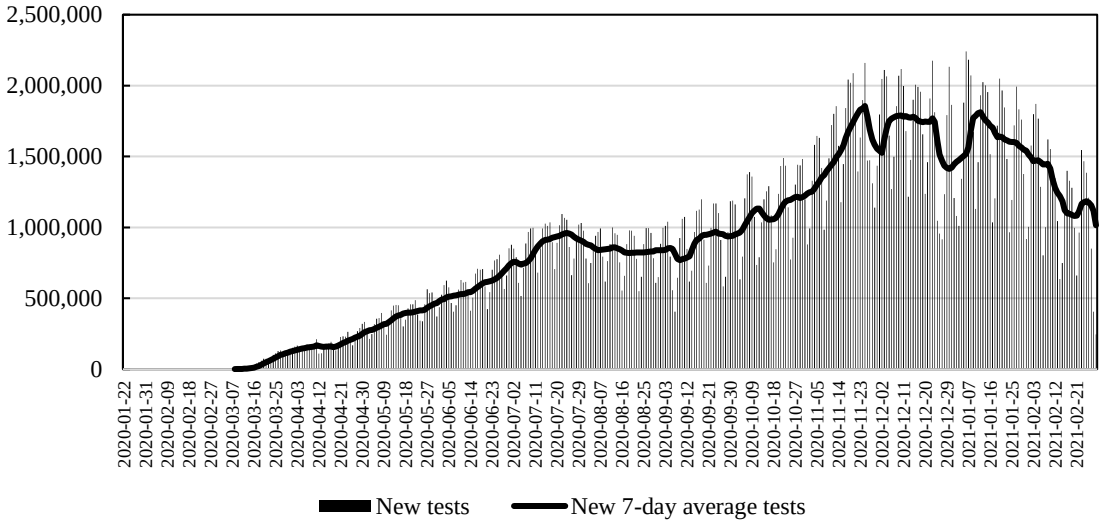

Figure 3 Daily tests of COVID-19 in the United States (20200122-20210301)

Sources: CDC (2021)

Further analysis of the positive rate shows that the positive rate change has also gone through four stages (Figure 4). In the first stage, many patients were not tested until the middle and late stages of the onset of symptoms due to the delay in reagents' distribution. For example, the first hospitalized patient in the United States was tested four days later because he did not meet the first-stage testing criteria (Abdalla, 2020). At this stage, the positive rate once soared to 25%. With the changes in testing standards and the increase in the number of tests, the positive rate gradually dropped between 5% and 10%. When the COVID-19 entered the third stage, this data rose again, setting a record of 27.74% on January 2, 2021. Entering February, the positive rate gradually declined, falling back to around 10% and fluctuating around 5% in late February. However, with the decrease in the number of tests, especially the number of tests on March 1, only 245,859, the positive rate has returned to 23.89%.

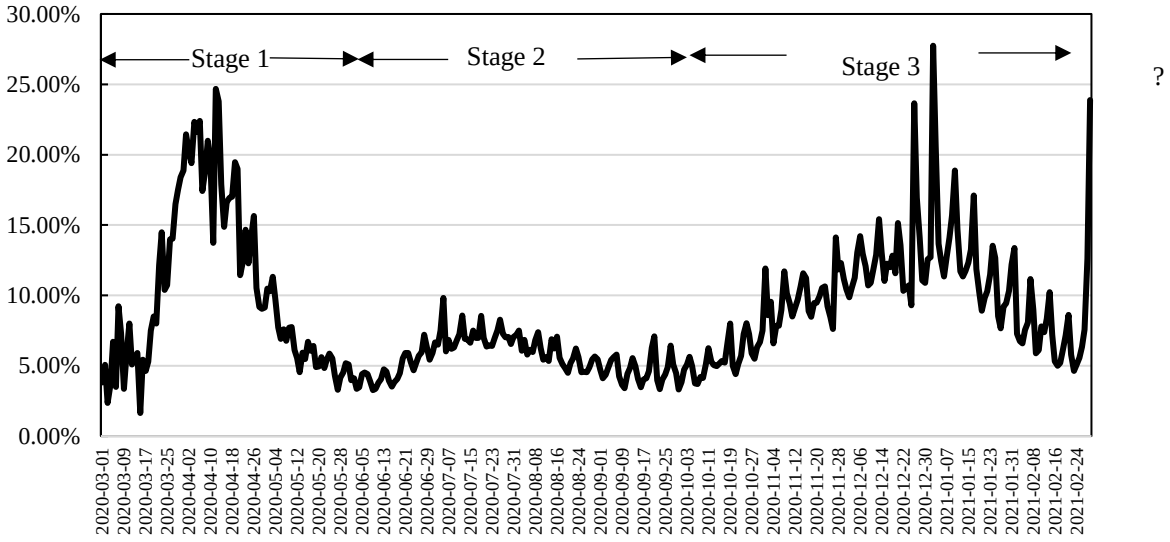

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Figure 4 Positive rate of COVID-19 tests in the United States (20200301-20210301)

Sources: CDC (2021)

2.2.1 Changes in guidelines about testing

The testing standards published by CDC have also undergone many changes (Table 2). At the beginning of the COVID-19, the CDC only allowed people with a history of travel to China or contacted people with a history of travel to China and had symptoms to be tested. After the first case of the respiratory disease of unknown origin was diagnosed in the United States, the CDC revised the testing standards to allow people with No source of exposure that have been identified to be tested.

It is worth noting that the CDC's testing policy for asymptomatic patients has been changing. In July, it was emphasized to pay attention to the "false negatives" in the test and interpret the test results. However, in August, the CDC revised the standard. If people are asymptomatic when they meet an infected person, they do not necessarily need a test. This controversial revision was quickly withdrawn in September. Anyone who meets an infected person needs to be tested.

Table 2 Changes in guidelines about coronavirus testing

20200122-20200226		
Clinical Features	**&**	**Epidemiologic Risk**
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath)	and	Any person, including health care workers, who have had close contact with a laboratory-confirmed 2019-nCoV patient within 14 days of symptom onset
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath)	and	A history of travel from Hubei Province, China, within 14 days of symptom onset
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization	and	A history of travel from mainland China within 14 days of symptom onset
20200227~		
Clinical Features	**&**	**Epidemiologic Risk**
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath)	and	Any person, including health care workers, who have had close contact with a laboratory-confirmed 2019-nCoV patient within 14 days of symptom onset
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization	and	A history of travel from affected geographic areas within 14 days of symptom onset
Fever of signs/symptoms of lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization and without an	and	No source of exposure has been identified

alternative explanatory diagnosis (e.g., influenza)		
20200717~		
Updated content: Except for rare situations, a test-based strategy is no longer recommended to determine when an individual with a SARS-CoV-2 infection is no longer infectious (i.e., to discontinue transmission-based Precautions or home isolation)		
20200826~		
Updated content: If people are asymptomatic when they meet an infected person, they do not necessarily need a test		
20200918~		
Updated content: Anyone who meets an infected person needs to be tested		

Sources: based on CDC (2021)

2.2.3 The relationship between cases decline and tests in the fourth stage

Daily COVID-19 tests in the U.S. have declined by more than a quarter since mid-January. In states like Michigan, testing rates have fallen by half, while disruptions caused by severe winter storms depressed numbers in Texas, Louisiana, and Mississippi. This dip coincides with a downturn in another important coronavirus metric: the seven-day average of newly reported coronavirus cases, which was down 57% Thursday compared with its peak on January 8.

We cannot assert an exact causal relationship between the significant reduction in the number of confirmed diagnoses in the fourth stage and the reduction in the number of tests. However, if it cannot be fully detected, a short period of data decline will cause the wrong direction to respond to the COVID-19. On the other hand, this may also be related to the start of vaccination, which to a certain extent reflects the people's slack in the COVID-19 after vaccination.

2.3 Deaths

2.3.1 Four stages of deaths

Like the number of confirmed cases, the change in the number of deaths has also gone through four stages (Figure 5). The first stage's deaths peaked in late April, with an average of around 2,000 deaths on seven days. A second rise began in June 2020, and a third rise began around mid-November. Unlike the number of confirmed cases, when the number of confirmed cases ushered in the third wave of growth in mid-October, the deaths over 7-day average were still in the second wave and a daily average of about 1,000 people. The deaths created new records in the late-January, with an average of around 3,000 deaths on seven days. After the number of deaths remained high for nearly a month, it began to fall to the level of 2,000 deaths on seven days in late February (Figure 6).

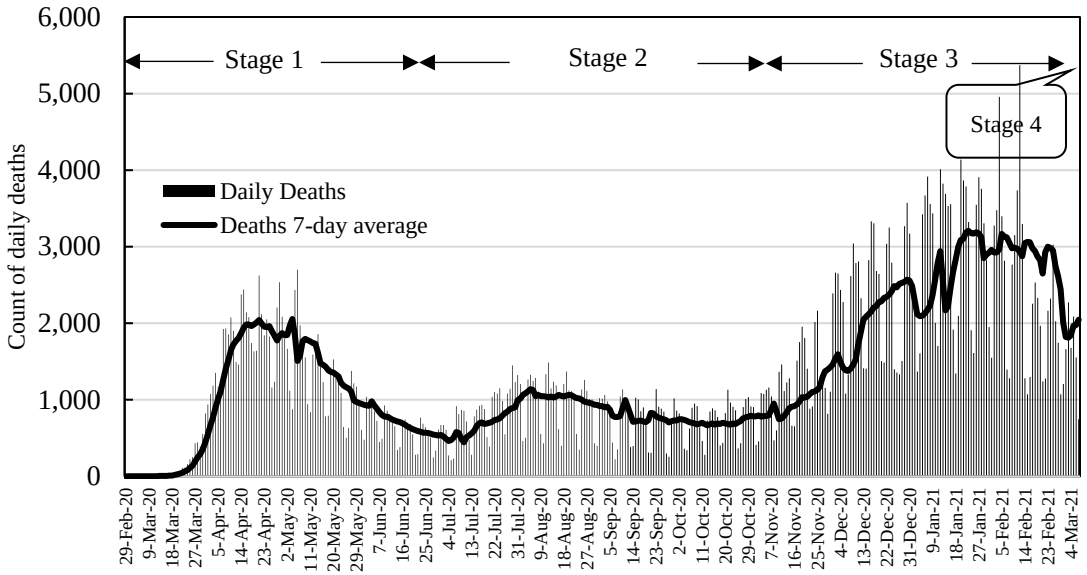


Figure 5 Daily deaths of COVID-19 in the United States (20200229-20210307)

Sources: CDC (2021b)

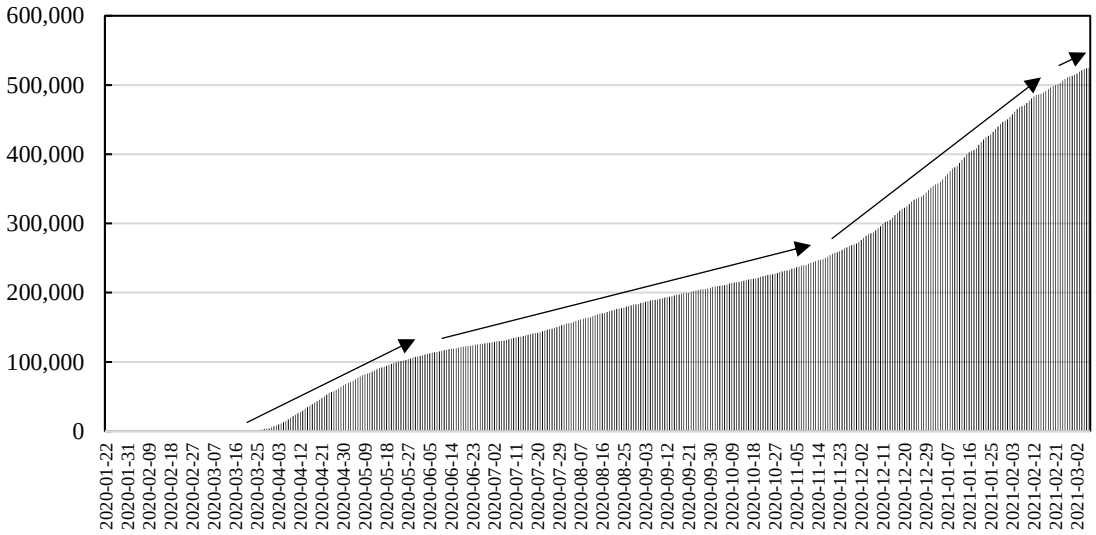


Figure 6 Cumulative deaths of COVID-19 in the United States (20200229-20210307)

Sources: CDC (2021b)

2.3.2 Interval days for each increase of 50,000 deaths

Unlike the confirmed cases, the increase in the number of deaths was faster in the second stage than in the first stage and slowed down in the fourth stage after the increase in the third stage.

Table 3 interval days for each increase of 50,000 deaths

	Interval Days

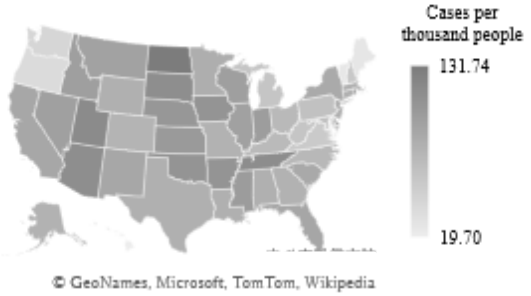
0-50,000	53
50,000-100,000	31
100,000-150,000	66
150,000-200,000	55
200,000-250,000	57
250,000-300,000	35
300,000-350,000	9
350,000-400,000	16
400,000-450,000	16
450,000-500,000	21

Sources: CDC (2021b)

It is calculated the interval days for each increase of 50,000 deaths (Table 3). It took 53 days to reach the first 50,000 deaths, and then it took 31 days to accelerate to the second 50,000 deaths. The rate of increase in the number of deaths in the second stage has slowed down, maintaining at a rate of 50,000 deaths every two months. However, after entering the third stage, the death rate increased rapidly, and it took only 35 days to reach the sixth death of 50,000 people. Even more surprising is that it took only nine days to increase the number of deaths from 300,000 to 350,000. Although the growth rate has slowed down, it has maintained a rate of about 50,000 deaths every two weeks.

2.3.3 Disparities in regions of deaths

Considering the calculation of COVID-19 cases per thousand people in each state, the West and Midwest are severer than the East (Figure 7). According to deaths per thousand people in each state, the Northeast, the Southwest, the North, and the South are the severer areas in the U.S. (Figure 8).



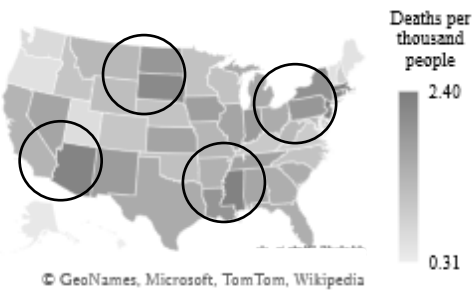


Figure 7 COVID-19 cases per thousand people in United States Data source: CDC (2021b)

Figure 8 COVID-19 deaths per thousand people in the United States Data source: CDC (2021b)

2.3.4 Mortality rate

From the point of view of the mortality rate, it was the highest in Stage 1 (Figure 9). Except for the initial extreme data, it remained around 8%. From the second stage, the mortality rate gradually decreased and remained around 3%. In the third stage of the rapid rise of the COVID-19, the mortality rate dropped slightly

to around 1.5%, and this data immediately returned to around 3% after entering 2021.

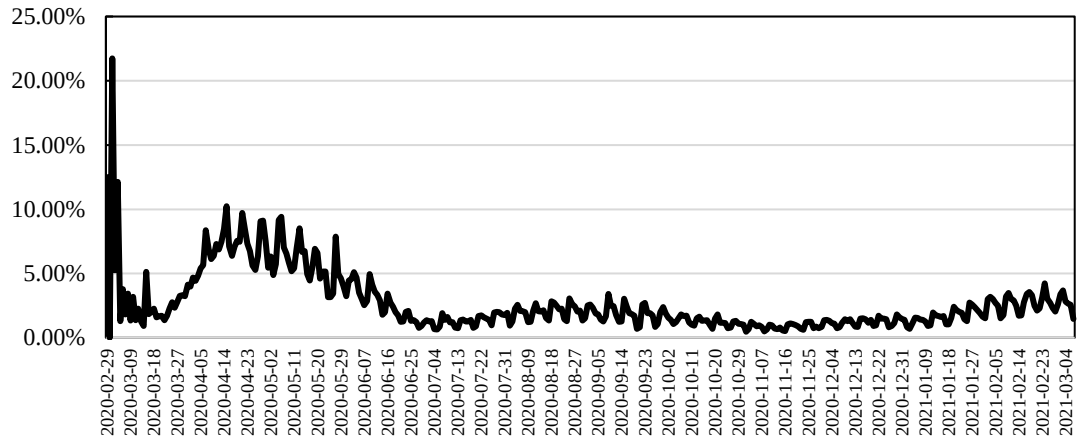


Figure 9 Mortality rate of COVID-19 in the United States (20200229-20210307)

Sources: CDC (2021a)

We compared this death toll with previous wars and major pandemics (Figure 10). It can be seen from the figure that as of March 6, 2021, the number of deaths from COVID-19 has jumped to second place in history, second only to the Spanish Flu.

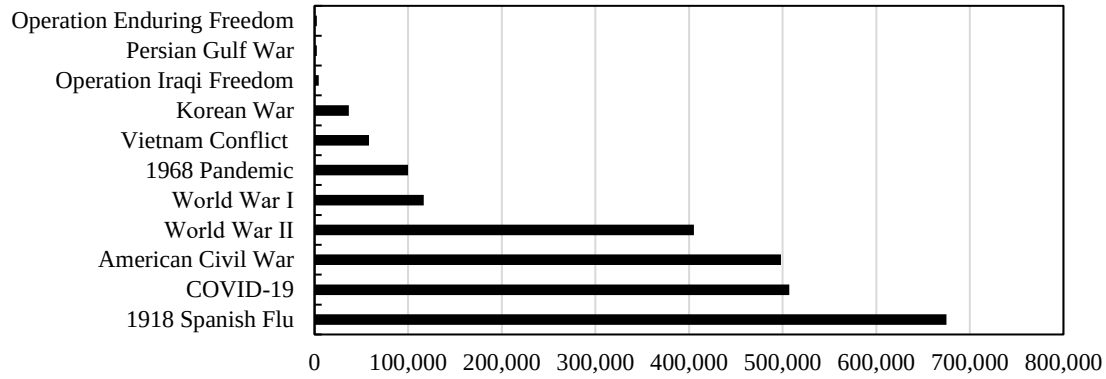


Figure 10 Deaths from wars and major pandemics (20200229-20210306)

Note: War figures include American military deaths in battle and in-theater deaths.

Source: CDC (2021c), Johns Hopkins University (2021), and Statista (2020)

2.3.5 Share of Deaths of COVID-19 in the United States by age, sex, race, and Hispanic origin

Nevertheless, unlike the Spanish flu, there are significant differences in the age group of death. Mortality was high in people younger than five years old, 20-40 years old, and 65 years and older. The high mortality in healthy people, including those in the 20-40-year age group, was a unique feature of this pandemic (CDC, 2021c). The death age group of the COVID-19 is primarily concentrated in the elderly over 65 years old. According to statistics, people aged 65 and above accounted for 80.87% of the total population that died this

time (Figure 11).

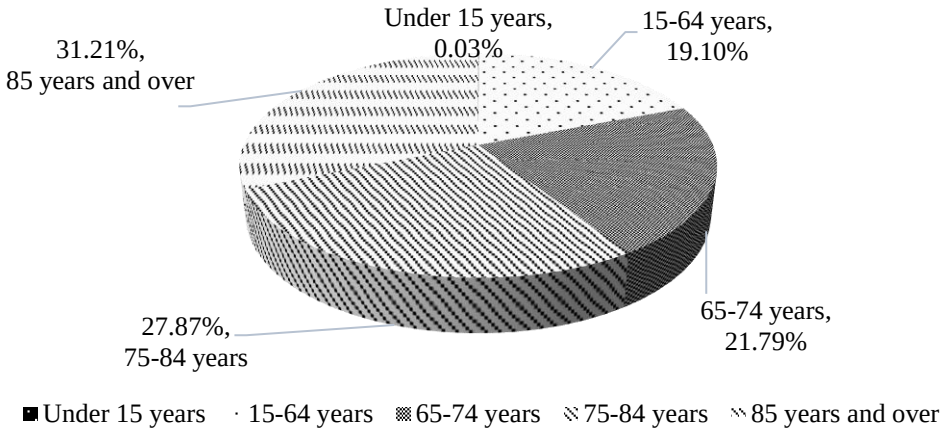


Figure 11 Share of Deaths of COVID-19 in the United States by age (20200229-20210306)
Source: CDC (2021a)

We then compare the age composition of the number of confirmed cases with the number of deaths (the number of confirmed cases and the number of deaths are grouped in different ways according to the sources) (Figure 12, 13). Most of the confirmed cases are concentrated in people aged 20-59, but the deaths are concentrated in people over 65. The characteristics of the COVID-19 in the United States are the same as those in other countries. The infection among young people is higher than that of the elderly, but the deaths are the elderly.

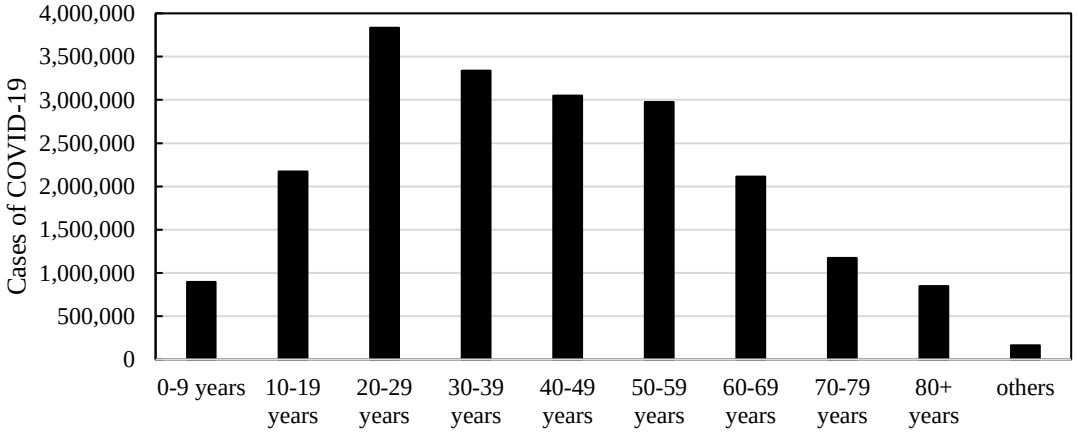


Figure 12 Cases of COVID-19 in the United States by age (20200229-20210306)
Source: CDC (2021a)

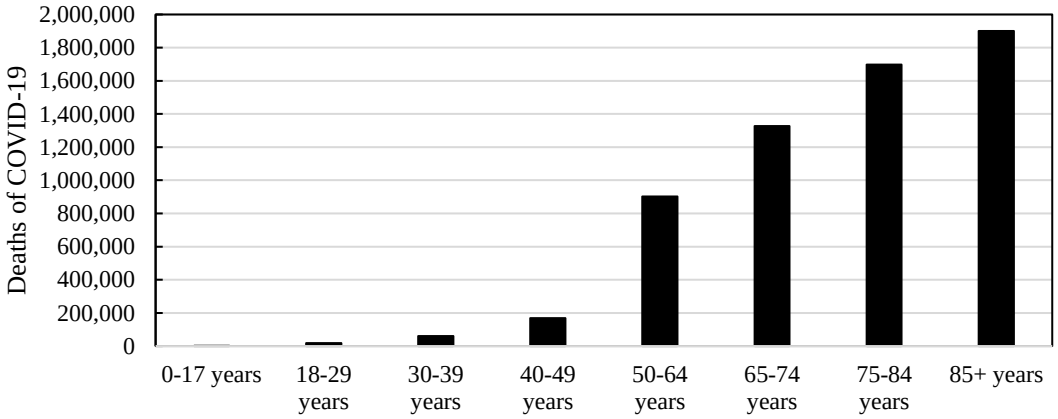


Figure 13 Deaths of COVID-19 in the United States by age (20200229-20210306)
Source: CDC (2021a)

Considering the gender of the death population, except for the number of female deaths in the population over 85 years old, the death toll of males is higher than that of females in other age groups (Figure 14).

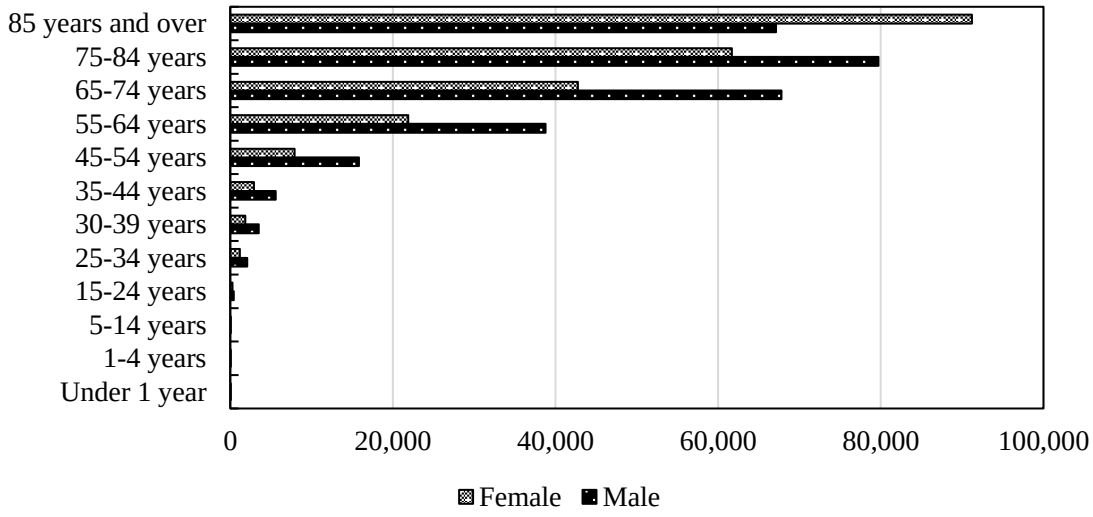


Figure 14 Deaths of COVID-19 in the United States by sex and age (20200229-20210306)
Source: CDC (2021a)

From the perspective of the death population's race, whites are the race with the most significant number of deaths, accounting for 61.58% of the total death population (Figure 15). Among ethnic minorities, Hispanics and Latinos' deaths are second only to whites, at 18.58%. Non-Hispanic Black or African Americans accounted for 14.64% of the deaths and ranked third. The next ones are Asian 3.87%, Non-Hispanic American Indian, Alaska Native 1.16%, and Non-Hispanic Native Hawaiian or Other Pacific Islander 0.18%.

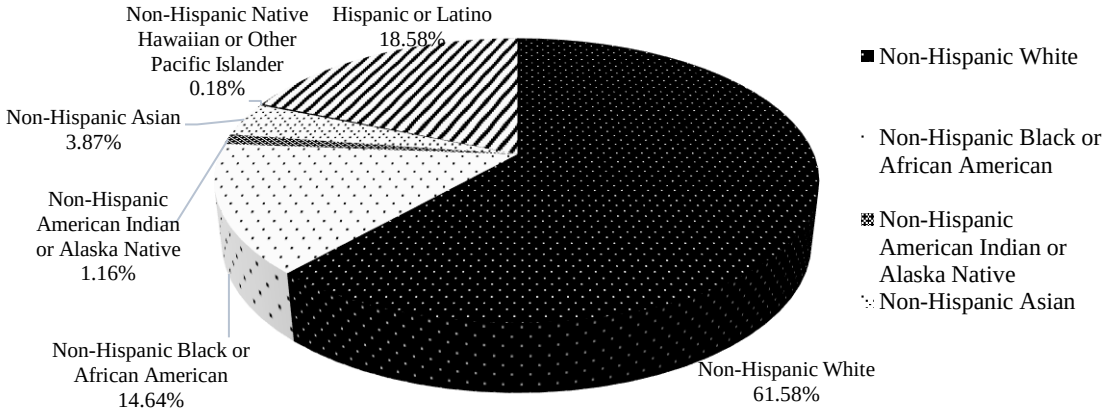


Figure 15 Share of Deaths of COVID-19 in the United States by race and Hispanic origin (20200229-20210306)

Source: CDC (2021b)

2.3.6 Questions about deaths of COVID-19

As the COVID-19 in the United States is becoming more and more severe, many people also have questions about the increase in the death toll, which is reflected in the CDC's number of influenzas counts. In the death data related to pneumonia and influenza released by the CDC that year, there are three items: "influenza," "pneumonia or influenza," and "pneumonia, influenza or COVID-19". We cannot separate the number of influenza deaths from the latter two alone, but when we only count the first "Influenza" (Figure 16), we can find that the number of influenza deaths before the 17th week of 2020 shows the following The same seasonality in previous years, which increased from February to March, began to decline after reaching a peak in mid-March. However, the data has dropped sharply from the 18th week of 2020. Even in the winter, the death toll has only changed by around 50 people, which is a far cry from the 3,000 people in March 2020. The CDC did not give a specific explanation.

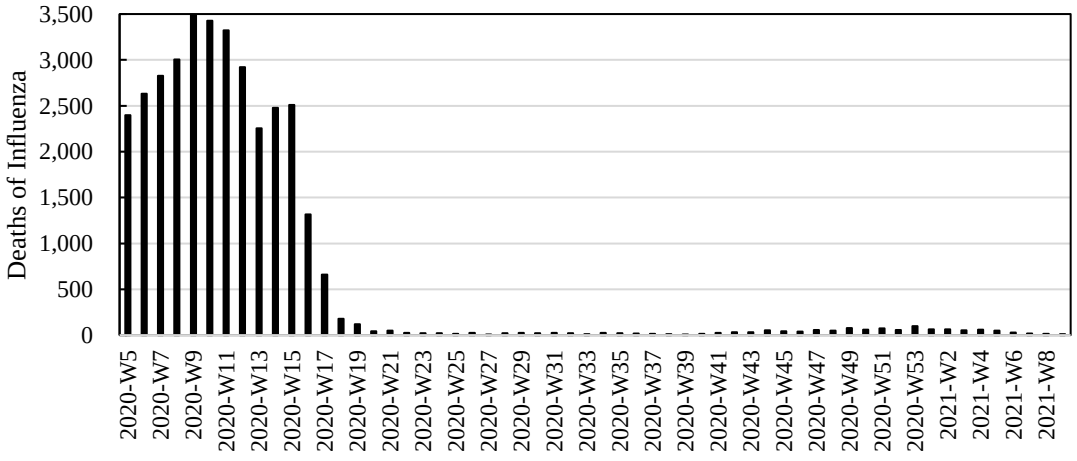


Figure 16 Influenza Deaths of COVID-19 in the United States (2020W5-2021W9)

Source: CDC (2021d)

2.4 Viral Spread in stages and states

This paper reflects the characteristics of the four stages of the virus's spread by calculating the proportion of each state with daily new confirmed cases and deaths (Figure 17, 18).

From the perspective of the number of confirmed cases, in the early stages of the COVID-19, the infection quickly broke out in the northeast, centered on New York State. New York State was the first to bear the brunt of the daily new confirmed cases in Pennsylvania, New Jersey, accounting for more than 50% of the country. After New York State implemented strict controls and reduced movement between states, the New York State COVID-19 was brought under control.

However, there has been a new round of outbreaks in southern regions such as California, Arizona, Florida, and Texas, far from the northeast.

After entering the third stage, in addition to the several critical states in the second stage, various other COVID-19s began to break out one after another. Among them, Illinois' central region also began to break out, showing that the COVID-19 has spread to the whole country.

After entering the fourth stage, New York State, where the COVID-19 situation was well controlled in the second and third stages, began to have a significant increase in the number of confirmed cases again, forming a situation where the first and second stages of critically ill states coexist at the same time.

In terms of the number of deaths, the spread and spread are basically like the number of confirmed cases. Simultaneously, considering that California, Texas, Florida, and other places are populous states, most of the cluster spread has aggravated the severity of the COVID-19.

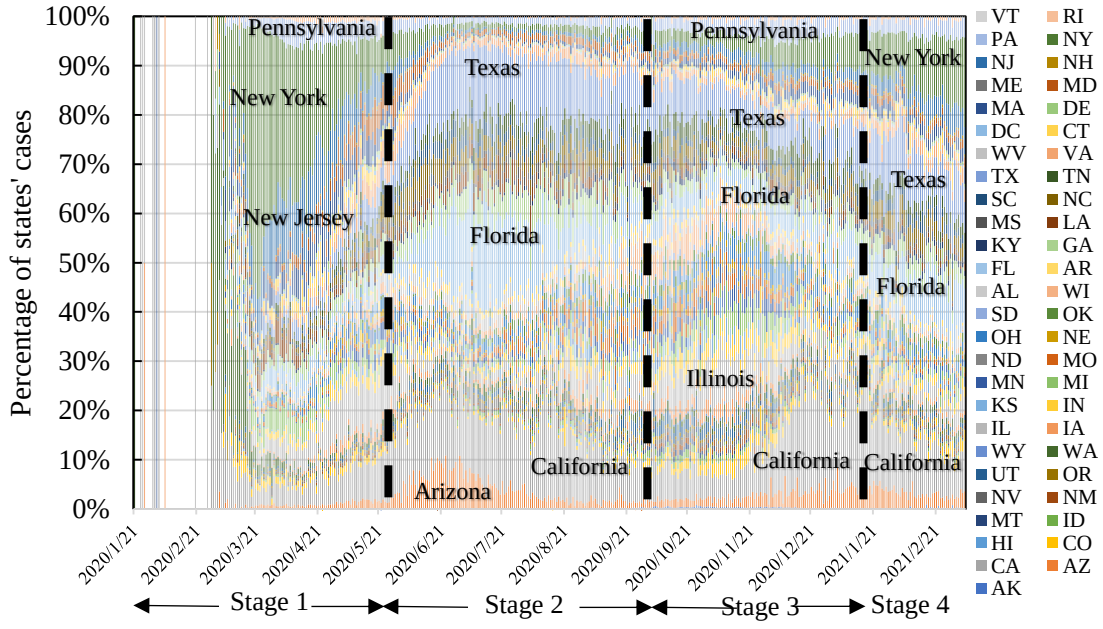


Figure 17 Covid-19 cases in the United States (cumulated by states)

Data source: CDC (2021)

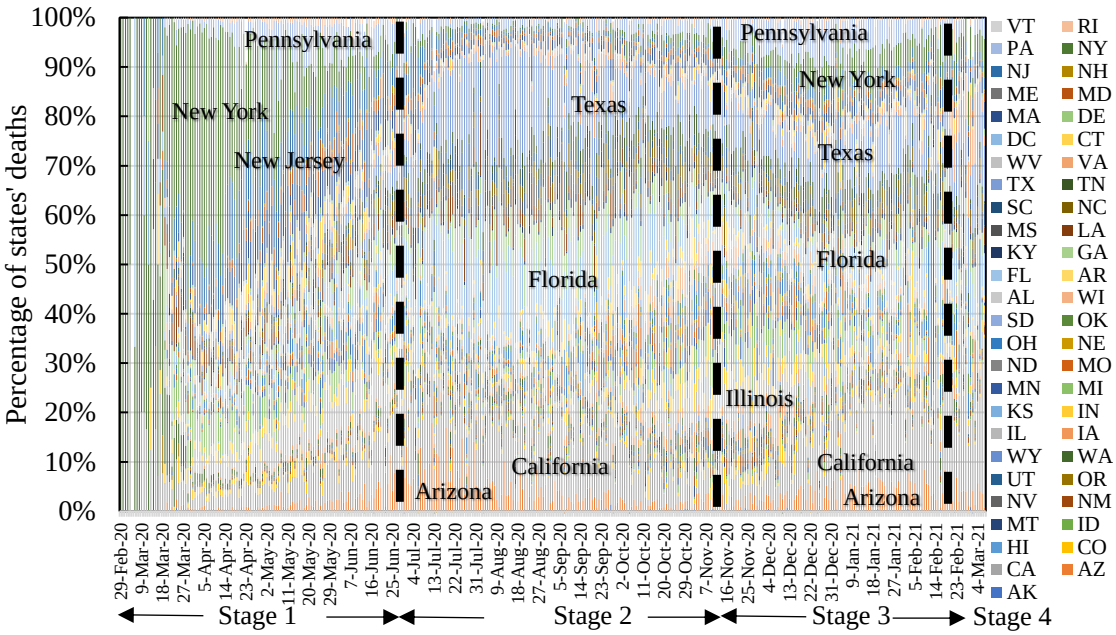


Figure 18 Covid-19 deaths in the United States (cumulated by states)

Data source: CDC (2021)

3. Federal Government Response to COVID-19

It has been a year since the United States first declared a national emergency. As of March 14, 2021, the number of confirmed cases in the United States has reached 29.4 million, and the death toll has climbed to 532,000. Judging from the current infection situation, the response to the COVID-19 in the United States has undoubtedly failed. However, we still need to review what policies the United States has adopted in response to the COVID-19 in the past 15 months, what phased results it has achieved, and what issues still need to be resolved urgently. We will analyze the federal government's policies mainly from a. Containment action, b. Testing, treatment, and vaccine, c. Economics, d. Technology and e. International cooperation. Due to regime iteration, we will separate the Trump regime from the Biden regime and analyze them in the form of a timeline.

3.1 The characteristic of federal government response to COVID-19

The United States announced the first case of COVID-19 on January 21. There have been two outbreaks in the United States so far. The first is the outbreak of small-scale infections, starting around February 22 and about 30 days after the first infection was announced.

Comparing the initial infections in the United States with infections in other countries, the central countries can be divided into type A and type B according to the time from the first case to the spread of the COVID-19 (Figure 19). It takes about ten days for countries like Netherlands, Iran, and Switzerland to go from the first case to 100 cases, while it takes about 30 days for countries like the United States, China, and South Korea to go from the first case to 100 cases.

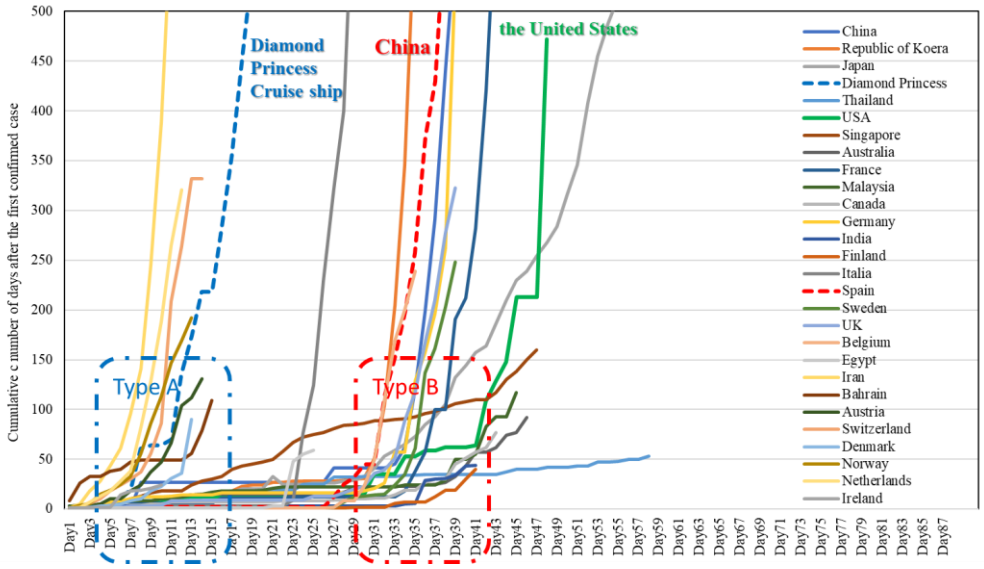


Figure 19 Type A and B of COVID-19 transmission at the initial stage

Data Source: WHO (2021), W. ZHOU (2020)

The second is the outbreak of large-scale infections. It started around March 14. On this day, Trump announced the "National emergency," but it was too late. More than 30,000 people are confirmed daily. If the United States takes resolute measures before and after the first small-scale infection outbreak period or within one month after the first case of infection is discovered, it is estimated that the current major outbreak situation will not occur from a statistical point of view.

The United States and other countries can refer to China's experience, and lessons (whether successful or failed), including the Resolute discovery measures taken after the first case, but countries such as the United States did not do so. The United States announced the first case on January 21 and the lockdown of Wuhan on January 23. The first small-scale outbreak in the United States began on February 22, one month after Wuhan's lockdown. The 30 days after the United States closed the city in China, this extremely critical time at which life is at stake, it has initially been China that used the cost of many lives and extreme measures such as the closure of the city to give the United States an early warning and gave him precious time for prevention and control. The President of the United States announced the "National Declaration of Extraordinary Events" on March 14. At this time, the number of infected people nationwide was 2,727. Less than a month later, on April 11, the number increased to 526,396. The average number of new infections per day is about 15,000. The number of infections in the past ten days is more than 30,000 per day.

It can be seen from Figure 20 that the delay of the large-scale outbreaks in China and the United States is about 45 to 55 days. This is precious time for saving more lives. The United States should have made good use of this precious time to actively adopt solid and feasible prevention and control countermeasures throughout the country.

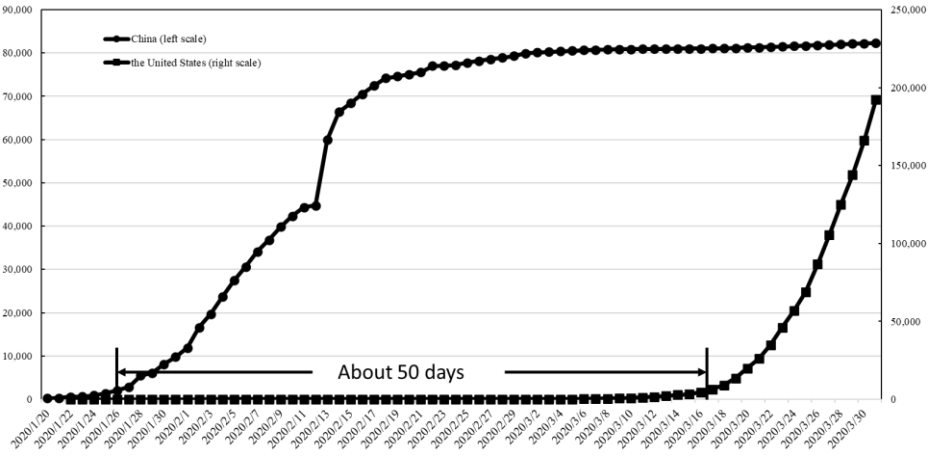


Figure 20 Comparison of Large-scale Outbreak Time of COVID-19 Infection between China and the United States

Data Source: WHO (2021), W. ZHOU (2020)

3.2 Trump's regime

3.2.1 January 2020 – May 2020

First, the following summary of the policy content from January to May is made. This period also corresponds to the early stage of the outbreak, from the early detection of the COVID-19 to the initial stage of the first wave of expansion. (Figure 21).

a. Containment action

After the COVID-19 broke out in China, the United States chose to screen at airports at first. On January 29, President Trump established the White House Coronavirus Task Force to coordinate and oversee efforts to "monitor, prevent, contain, and mitigate the spread" of COVID-19 in the United States. At this stage, the United States mainly deals with people's control policies entering from airports or ports.

The virus spread rapidly without control and began to break out in March. On March 13, the federal government escalated from public health to a national emergency, and 52 days have passed since the first confirmed case was discovered (Kevin Liptak, 2020). Trump acknowledged that the US COVID-19 "may get worse" and that "the next eight weeks will be very critical." The United States would improve its detection capabilities for the COVID-19 through public-private cooperation, but no one would "take any responsibility" for the late detection of the virus in the United States in the early stages of the COVID-19. As of March 16, all states have successively declared a state of emergency or public health emergency (Rosie Perper et al., 2020).

The release of national emergency was coming with restrictions. It included prohibitions and cancellation of large-scale gatherings, stay-at-home orders, and school closures. In the same month, while the government allocates medical resources at home and purchases large quantities from abroad, it also urges companies to build new assembly lines to expand medical equipment and supplies.

Different states have different policies in response to emergencies. California is the first state to

implement a lockdown order, requiring residents not to leave their homes for non-essential jobs or going out for purchases from March 19. The state of Georgia announced on April 1 that it would implement a "home isolation" ban from April 3 to 13. However, the next day, April 2, it was announced that it would reopen the beach previously closed by the local government, hoping to encourage individuals and family groups to exercise and reduce the discomfort caused by isolation and social distancing.

However, soon after the March release, the Trump administration considered lifting the restrictions as early as possible around Easter. As the number of confirmed cases reached the peak of the first wave on April 10, the restrictions could not be lifted early. However, in late April, when the COVID-19 did not improve significantly, Colorado took the lead in lifting a stay-at-home order on April 26, and 45 states had lifted this order before May 15.

b. Economics

The Coronavirus Aid, Relief, and Economic Security (CAREs) Act provide 2.2 trillion in individuals, small businesses, large corporations, state/local government, health care, and education on March 27 (Table 4). The CARES Act also extended student loan relief to defer all student loan through September 30. On April 24, the Paycheck Protection Program and Health Care Enhancement Act (PPPHCEA) provides an additional 321 billion USD, including an additional 60 billion USD for emergency loans and grants and 25 billion USD for COVID-19 testing.

Table 4 CAREs act funding allocations

Group	Funding (Billions, USD)
Individuals	560
Small Businesses	377
Large Corporations	500
State/Local Government	340
Health Care	135
Education	43

Source: Senate (2020)

The unprecedented economic rescue package gave directly a one-time payment of $1,200 per adult and $500 per child directly to the public.

c. Testing, treatment, and vaccine

In February, the United States began to implement virus testing, but the test kit distributed by CDC found that the test results were unreliable about two weeks after the test. Simultaneously, due to strict testing standards (Table 2), many suspected cases have not been tested in time.

In the face of the rapidly increasing number of confirmed cases of COVID-19 every day, The CARES Act allocated to develop rapid COVID-19 tests to accommodate large-scale tests. In addition to testing, the

U.S. has also fast-tracked vaccine development.

At this stage, it is also begun to explore the effect of Hydroxychloroquine on the COVID-19, and the FDA approved the use of Hydroxychloroquine in late March.

d. Technology

Epidemiological investigations are fundamental in the early control of the COVID-19. CDC and Apple have developed tracking apps. CDC can obtain the spread of infection by travel routes based on the basic information of smartphones.

e. International cooperation

In terms of international cooperation, the COVID-19 in East Asian countries, especially China and South Korea, began to be effectively controlled around late March. At the same time, the United States began to import medical supplies from China, South Korea, and other countries and emphasized the strengthening of cooperation between countries.

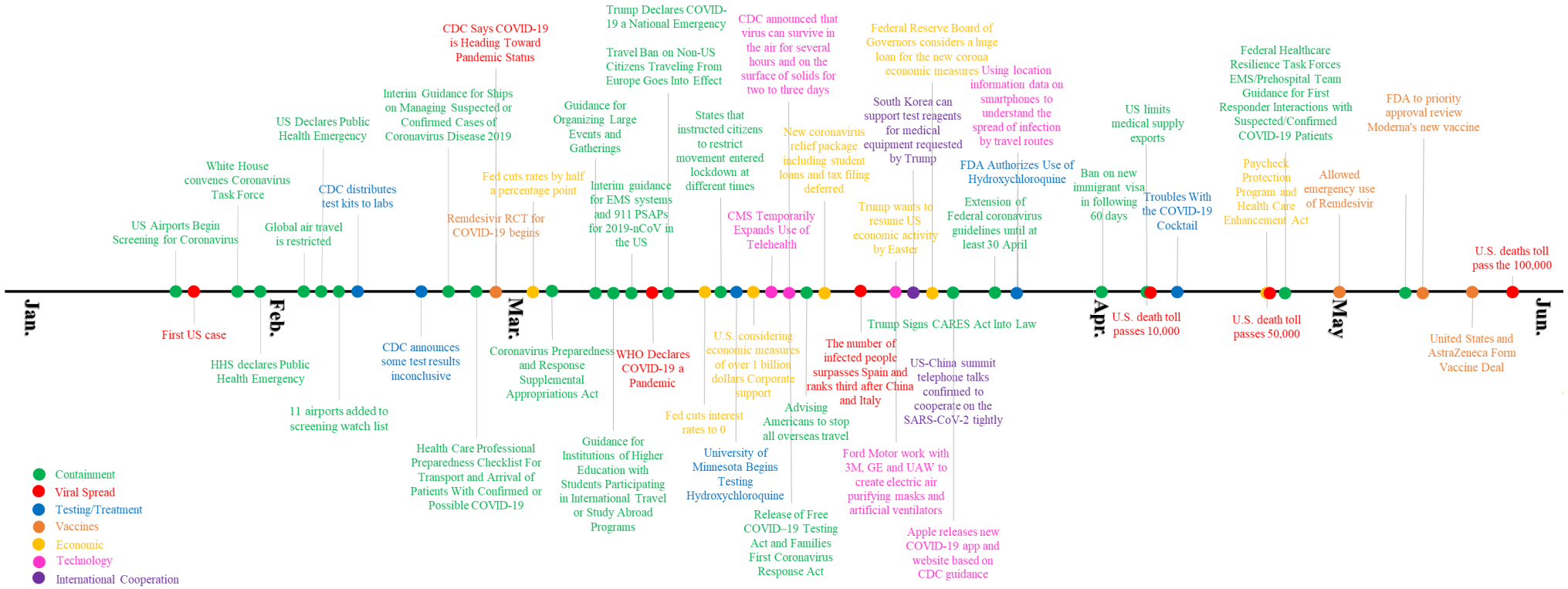


Figure 21 Federal government response to the COVID-19 pandemic from January to March in 2020

f. Issued remained in the initial stage

In the early stages of the COVID-19, the United States adopted much containment to curb the spread of the COVID-19 (Figure 21). In the early stage, the United States invested in vaccine research and developed rapid test kits to meet massive tests' needs. Besides, because of the impact of home isolation and other policies on the economy, the United States has also adopted a package of 2.2 trillion economic stimulus measures to provide financial assistance to individuals, small businesses, large corporates, and medical education. However, at this stage, the United States mostly adopted passive defensive countermeasures. However, due to the late response, the testing reagent problems, and the FDA approved private institutions for testing at the end of February, which led to the lack of testing before March. Also, the relief subsidies issued by economic policies for individuals do not guarantee that the relief funds will be used for COVID-19 prevention. Economic activities such as eating out and consumption have increased the chances of gathering and increased the risk of COVID-19 expansion. Furthermore, the FDA-approved Hydroxychloroquine has not proven to be effective. On the contrary, the medication of unknown dosage has misled the public.

3.2.2 June 2020 – December 2020

a. Containment action

Coronavirus cases more than doubled in 14 U.S. states in June, including California, Florida, and Texas. After entering June, with the end of emergency declarations in most states and the relaxation of home quarantine orders, the COVID-19 rebounded. However, unlike the first wave, the fatality rate of the virus is lower than that of the first wave. This may be related to the second wave of many tests and because the initial experience in fighting the COVID-19 was accumulated during the first wave, and the treatment was more targeted. Moreover, although the COVID-19 is divided into four stages according to the peaks and troughs presented in this article, Dr. Anthony Fauci believes that the United States may still be in the first wave of COVID-19.

b. Testing, treatment, and vaccine

In the face of the outbreak, Trump publicly stated at the rally that testing is a "double-edged sword." He asked health officials to slow down the speed of testing to respond to public concerns about the increasing number of infections.

Studies have shown that remdesivir was superior to placebo in shortening the time to recovery in adults hospitalized with Covid-19 and had evidence of lower respiratory tract infection. The FDA approved the clinical use of remdesivir in late October.

In mid-May, the federal government launched a plan to accelerate vaccines and therapeutic drugs, and diagnostic technologies against the new coronavirus. The program was named "Operation Warp Speed." It is mainly HHS, including the joint participation of multiple agencies such as the Centers for Disease Control and Prevention, and is implemented by funding private companies in the pharmaceutical industry. It is hoped that targeted vaccines and drugs will come out in early 2021

The initial funding of $10 billion for the operation came from the CARES Act passed by Congress at the end of March. As of October 2020, a total of US$18 billion has been invested in Operation Speedy. In addition to vaccine and drug research and development, other necessary related industries are also funded, such as the mass production of vaccines and related equipment and logistical support such as vaccine storage and distribution.

Among them, Johnson & Johnson, Regeneron Pharmaceuticals, Inc., Novavax, Pfizer, GSK, and Modena's vaccines have all received funding. Also, Regeneron Pharmaceuticals, AstraZeneca, Eli Lilly, and Company, and other companies have all received funding to develop drugs to treat COVID-19. In terms of mass production, storage, and distribution of vaccines and drugs, the operation also has a well-planned and large investment amount.

While Biden publicly vaccinated his first dose on T.V. in December, vaccines in various regions began to be vaccinated in December.

c. Economics

A $900 billion plan, combined with the omnibus spending plan known as the Consolidated Appropriations Act (CAA), 2021, was passed on December 27. It also extends the eviction moratorium by 30 days and suspends student loan debt until April 2021 (Table 5).

Table 5 Consolidated Appropriations Act funding allocations

Group	Funding (Billions, USD)
PPP	300-330
Vaccines	28
Rental Assistance	25
State virus testing	20
Child Care Provider	10
Education	82
Unemployment insurance	300
Individual	100

Source: Senate (2020)

Direct payment of $600 per person was funded, with benefits phasing out for those who make more than $75,000 annually. It is also expected to rescind over $429 billion in unused CARES Act funding

d. International cooperation

In July, the Trump administration officially notified the United Nations of its decision to withdraw from the World Health Organization (WHO). The United States is the largest funding country and plays a massive role in the WHO's response to infectious diseases in developing countries in terms of personnel dispatch and drug provision. If these activities are suspended, the prevention and control measures at the place where the disease occurs will become slow, and it may become increasingly difficult to control the spread of infectious diseases on a global scale.

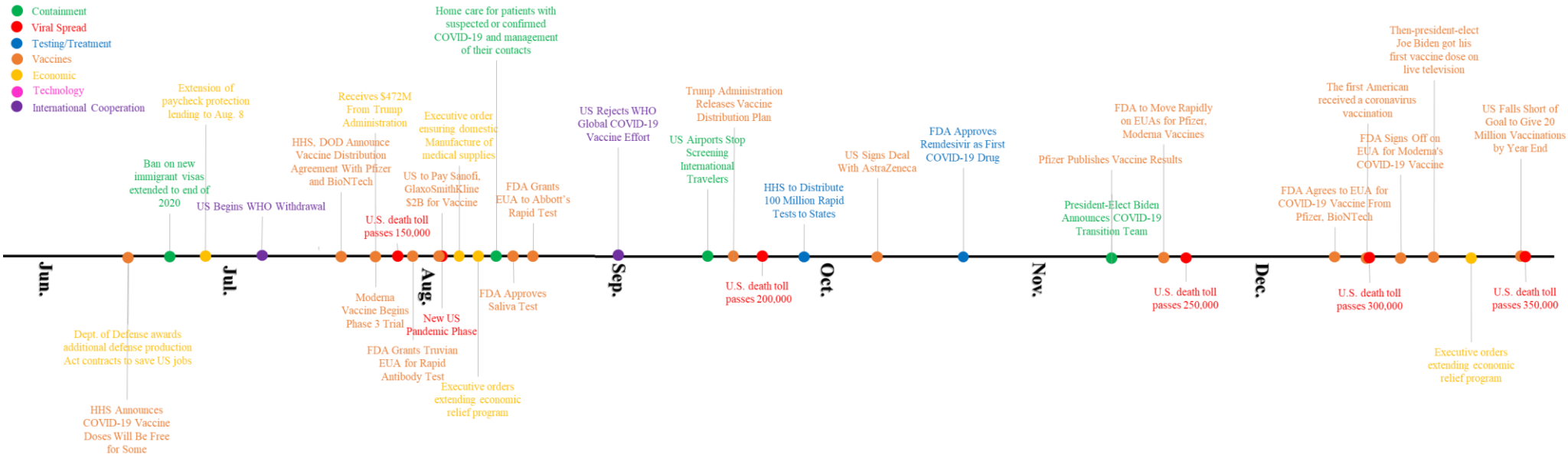


Figure 22 Federal government response to the COVID-19 pandemic from January to March in 2020

f. Issued remained in the initial stage

Trump's diagnosis of the new crown on October 2 shocked the world but combined with the second and third wave of the US COVID-19, this situation seems understandable. Among them, the mask mandates in the United States should be particularly emphasized. Since the beginning of the COVID-19, the United States has been controversy about whether to wear a mask. Although there is enough evidence that wearing a mask can simply and effectively prevent the spread of the COVID-19, it can also protect others. Masks have become a way to express political attitudes, and how to view the scientific basis for wearing masks also depends on the party's position.

But in contrast, although Trump and other Republicans have always emphasized that there is no need to wear masks when a confirmed case appears in the White House, the White House immediately issued Mask mandates. Some people do not wear masks because they think it is useless; others think that wearing or not wearing masks is their freedom and therefore violates their rights. The many controversies caused by small masks have accelerated the spread of the virus to a certain extent. They are ending the relationship between the United States and the WHO has caused widespread concern and backlash in the world. The United States, as the largest contributor and the country with the worst COVID-19 situation in the world, chooses to withdraw from the WHO at this moment, which may add another difficulty to global COVID-19 control.

3.3 Trump's conflicting messages

From "watching the fire across the shore" to becoming the country with the most significant number of infected people, the United States experienced a very tortured year in 2020. Looking back on the anti-COVID-19 policy for the past year, we cannot say that the United States has taken a detour, but some policies indeed ineffective in anti-COVID-19.

As President, Trump's words on various occasions are also surprising. After sorting out Trump's speeches on COVID from January 2020 to January 2021, he found many conflicting messages. In the word frequency statistics graph, the darker the color, the higher the frequency of the word (Figure 23).

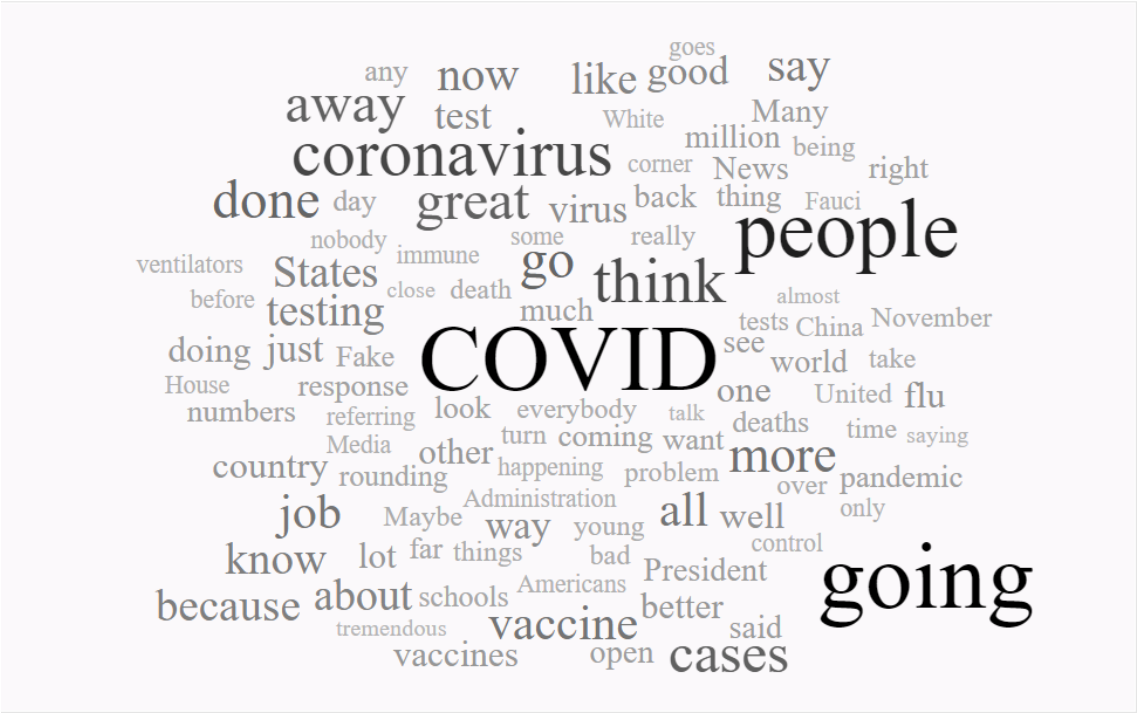


Figure 23 The word frequency statistics of Trump's speeches for COVID-19

3.3.1 About Vaccine

Trump has repeatedly stated that the virus will disappear with or without a vaccine.

"*But I will tell you, we're very close to a vaccine, and we're very close to therapeutics, really good therapeutics. And — but even without that — I don't even like to talk about that*" (20200617)

3.3.2 About virus

a. Covid-19 will vanish

Since February, the President has declared at least 38 times that Covid-19 will disappear or is currently disappearing.

"... that will go away in April." (20200210)

"... It's going to go away." (20200312)
"...It is going to go away. It is going away." (20200403)
"...with or without a vaccine, it's going to pass" (20200505)
"...I always say, even without it [a vaccine], it goes away." (20200616)
"...Well, the virus will disappear. It will disappear." (20200721)
"...This thing's going away. It will go away like things go away… No, it'll go away." (20200805)
"...It is gonna disappear. It's gonna disappear." (20200915)
"... It's gonna run its course." (20201016)

b. Underestimation of the threat of COVID-19

Trump thinks COVID-19 is like flu. Immediately after denying it, he thought that the view of COVID-19 was like flu was correct.

"*This is a flu. This is like the flu.*" (20200206)
"*It's not the flu. It's vicious*" (20200330)
"*Many people every year, sometimes over 100,000, and despite the Vaccine, die from the Flu. Are we going to close down our Country? No, we have learned to live with it, just like we are learning to live with COVID, in most populations far less lethal!!!*" (20201006)

3.3.3 About China

Before March, Trump highly praised China's response to the COVID-19. However, with the spread of the COVID-19 in the United States, this praise became a responsibility, and began to use the term China virus until the end of the term and believed that China should be responsible for this pandemic.

"*The United States greatly appreciates their efforts and transparency …*" (20200124)
"*China is working very, very hard. I have spoken to President Xi, and they're working very hard.*" (20200225)
Start to call the virus as "*China Virus*" (20200625)
"*This is nobody's fault but China.*" (20200910)
"*When this first came out, if we didn't do a good job, they predicted 2.2 million people would die, we're 210,000. We shouldn't be at, one, it's China's fault. They allowed this to happen.*" (20201012)

Trump continues to falsely claim that the virus will somehow just go away — even as the U.S. experiences a surge in cases and hospitalizations. Trump's conflicting messages brought much misleading to the people. With his inconsistent statement, the handle was added invisibly in the process of responding to the COVID-19 prevention and control.

3.4 Biden's regime

3.4.1 Containment action

One day after Biden was sworn in as the 46th president, he announced ten measures against the COVID-19, including speeding up vaccination and virus testing and emergency legislation to speed up the production of necessities such as masks. Biden has ordered people to wear masks on federal real estate and interstate transportation, including airplanes, trains, and buses. He asked the American people to wear masks during the first 100 days of his appointment, but he said that he did not have the power to force people to wear masks nationwide. Unlike former President Donald Trump, Biden's anti-COVID-19 policy emphasizes national strategy instead of relying on states to determine the best plan.

Stricter policies have been introduced for travel and entry restrictions. International travelers need to obtain a negative virus test result before departing for the United States and self-quarantine 14 days after arrival.

The mandatory wearing of masks and social distancing will extend from the federal government's buildings and offices to airports, planes, trains, buses, and other vehicles.

3.4.2 Testing, treatment, and vaccine

Since the beginning of the pandemic, testing shortages, backlogs, and delays have been problems facing the United States. Biden's response plan calls for expanding the testing scale, but it did not set a goal. The Biden administration plans to collect more data on coronavirus control efforts.

Biden hopes to achieve a 100 million vaccination plan within 100 days of taking office. Nearly 20% of the U.S. population has received at least one vaccination by March 11, 2021.

3.4.3 Economics

President Joe Biden signed a $1.9 trillion relief plan on March 11; this figure accounts for 9.1% of U.S. nominal GDP in 2020 (Table 6). It includes $1,400 direct payments, increases weekly federal unemployment benefits to $400. Moreover, it continues to extend eviction and foreclosure moratoriums through September. This plan reflects the importance of the Biden administration in fighting the COVID-19. It provides $350 billion for state and local governments, $170 billion for schools, $50 billion for virus testing, and $20 billion for vaccines.

Table 6 Comparison of the four economic stimulus policies since 2020

	CAREs ACT	PPPHCEA	CAA	Relief plan
Permitted Data	2020.03.27	2020.04.23	2020.12.20	2021.03.11
Funding amount (Billion, USD)	2,000	480	900	1,900

Individual	250 (for direct payments) 300 (for unemployment)	Not included	286	1000
Small Business	377	381.3	325	15
Large Corporations	500	Not included	Not mentioned	Not mentioned
State/Local Government	150	2.1	Not included	350
Health Care	12.73	100	69	270
Education and transport	Education 30.8 Transport 36	Not included	Education 82 Transport 45	130

Source: based on Senate (2020), Senate (2021)

3.4.4 International cooperation

In response to the COVID-19, Biden will set up a new coordinating body, and the United States will also stop the withdrawal process initiated by the Trump administration from the WHO.

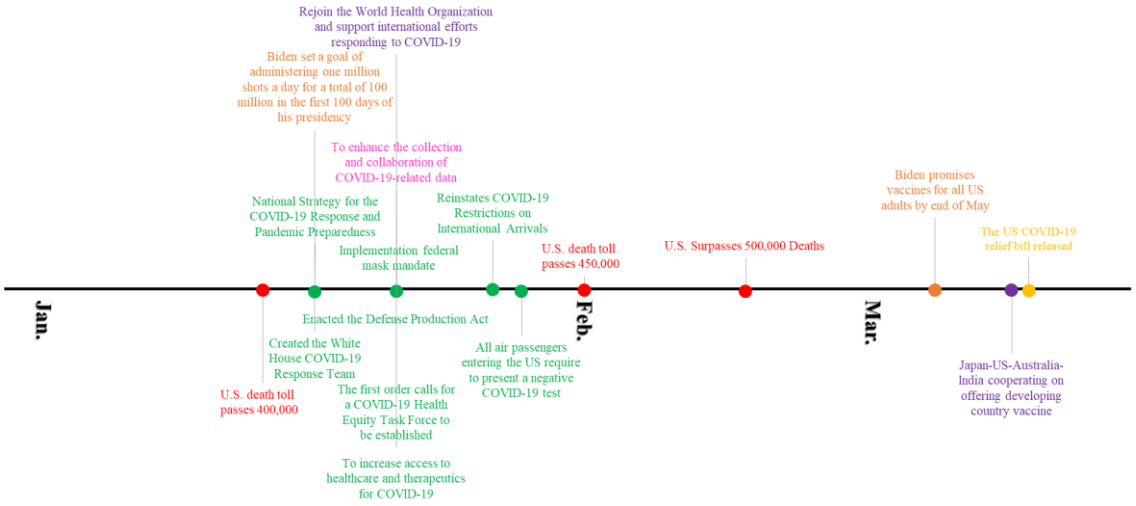


Figure 24 Federal government response to the COVID-19 pandemic from January to March in 2020

3.4.5 Issues of Covid-19 Pandemic in the United States

There are some concerns about the relief plan signed in March. Since the U.S. fiscal stimulus volume, this year may raise aggregate demand above the potential level as early as the second quarter, and it is in stark contrast to the history of "insufficient stimulus" in 2009. Therefore, the current round of inflation pressure in the United States may also substantially exceed the level after the 2008

financial crisis.

4. Conclusions

4.1 The impact of the COVID-19 on the U.S.

COVID-19 has dealt a heavy blow to the U.S. economy (Figure 25). Real GDP decreased 3.5 percent in 2020 (from the 2019 annual level to the 2020 annual level), compared with an increase of 2.2 percent in 2019 (U.S. Bureau of Economic Analysis, 2021). From the perspective of GDP growth in the four quarters, the United States' GDP dropped significantly in the first and second quarters, and the decline stopped in the third quarter. In the third quarter, the seasonally adjusted annual growth rate of US GDP was as high as 33.4kk%, the highest growth rate since the record in 1947. However, calculated at fixed prices, Q3 of 2020 will be 2.9% lower than Q3 of 2019. The U.S. did not come out of recession in the third quarter of 2020 but was still downward. In the fourth quarter of 2020, the U.S. gross domestic product (GDP) increased by 4% year-on-year, a sharp slowdown from the 33.4% growth in the previous quarter. The Fed believes that economic development will largely depend on the results of COVID prevention and control.

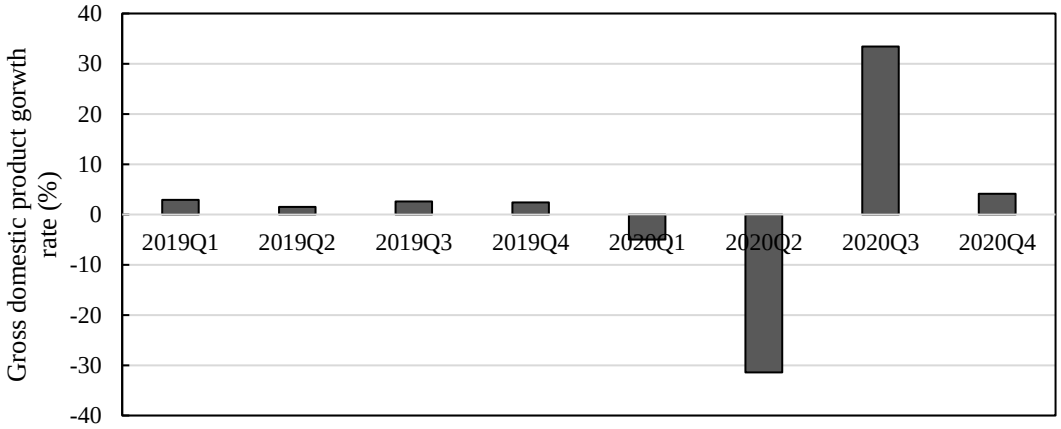


Figure 25 Gross Domestic Product, Fourth Quarter in 2019-2020

Source: U.S. Bureau of Economic Analysis (2021)

Since last year, the total amount of the rounds of rescue programs launched by the United States has exceeded $5 trillion, which is about one-fourth of the United States' GDP for the whole year of 2020. After the announcement that the rescue plan was voted on March 10, the Dow Jones Index expanded its gains in the intraday market, once rising by more than 550 points (Figure 26). Judging from the trend of the U.S. market last year, a considerable part of the enormous relief funds will soon flow into the capital market, driving up prices. The balance sheet's inflation has led to excess liquidity

in the financial market, which has led to asset price bubbles.

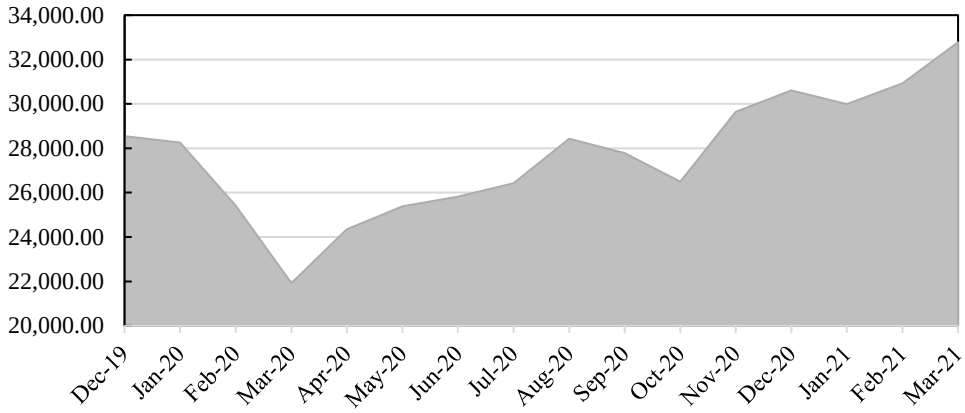


Figure 26 Dow Jones Industrial Average (DJI) (201912-202103)

Source: Investing.com (2021)

COVID-19 has raised the unemployment rate in the United States to a new high. In April, US unemployment reached an official peak of 14.8%, 10.4% higher than in March (Figure 27). In the history of the United States, only during the global economic crisis of the 1920s and 1930s did there have been higher unemployment rates than it is now. It is estimated that the unemployment rate in the United States reached 25% at that time.

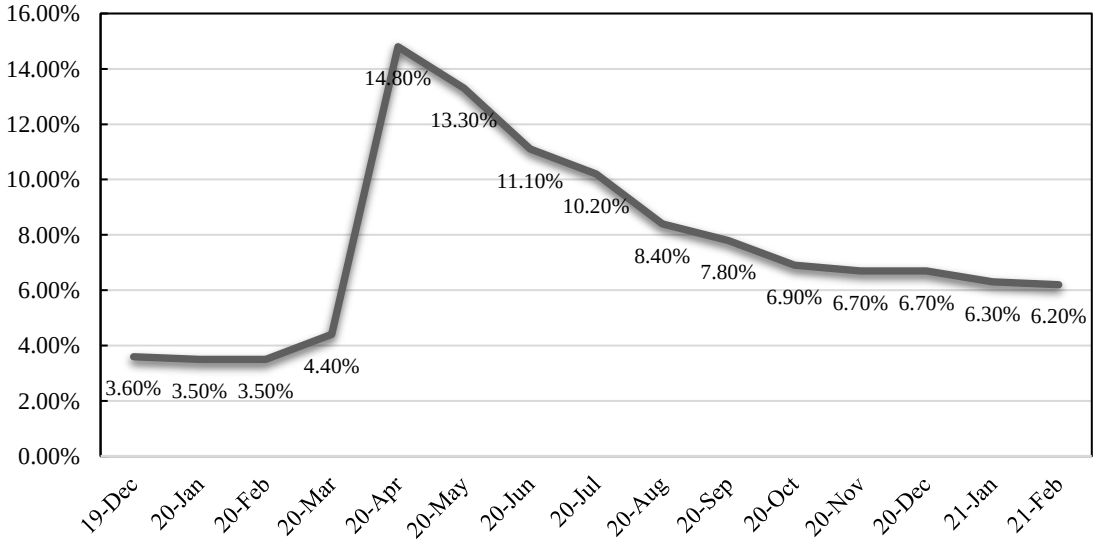


Figure 27 Unemployment rate in the United States (201912-202002)

Source: U.S. Bureau of Labor Statistics (2021)

The unemployment rate has remained at 6% since October, and about 4 million people have been

unemployed for at least 27 weeks (Figure 28). Although the unemployment rate has declined, the problem of long-term unemployment among the unemployed is more serious.

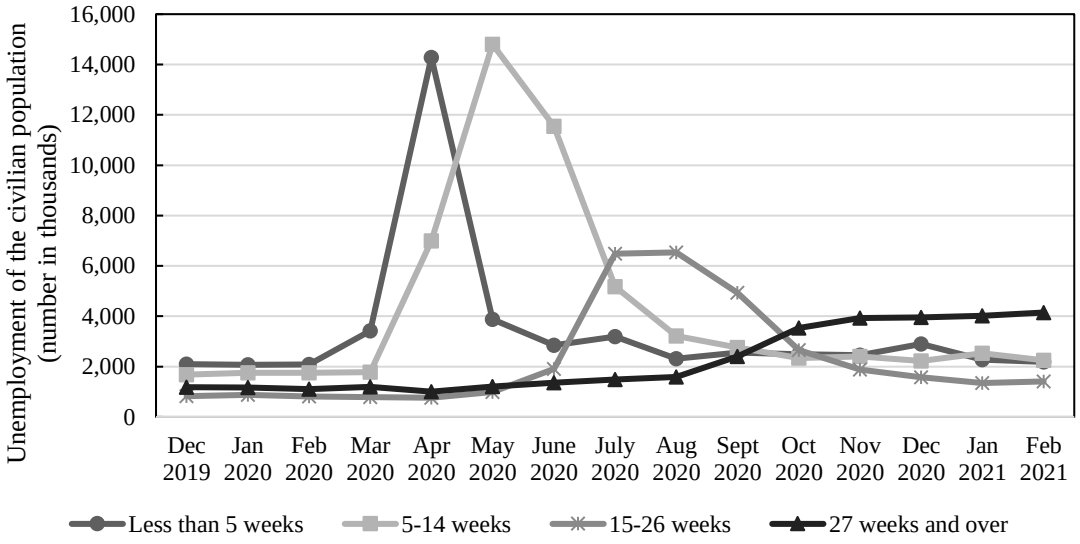


Figure 28 Duration of Unemployment in the United States (201912-202002)

Source: U.S. Bureau of Labor Statistics (2021)

4.2 Review of federal government response to COVID-19

This article aims to provide a comprehensive summary of the federal government response to COVID-19 from the respective of containment, test, vaccine, and economy. We also compared the differences between the regime of Trump and Biden from January 2020 to March 2021.

As the world's largest economy, the United States has paid a heavy price for COVID-19 in the past year. March 14, 2021 one year has passed since the Trump administration announced that the country had entered the National emergency for the first time in response to COVID-19. On the day, the United States' infected population has accounted for 24.71% of the world's population, and the deaths accounted for 20.15% of the world's population. According to the CDC's preliminary estimates, the life expectancy of Americans will be reduced by one year in the first half of 2020. This is the most significant drop since World War II and the lowest level since 2006.

The stagnant response to the epidemic has shown the worst aspect of U.S. government governance, and even simple, common-sense health measures have political implications.

In the early 30-day of COVID-19, the number of confirmed cases in the United States has soared from only 70 to more than 160,000. Due to multiple factors such as the failure of virus detection methods caused by technical defects, the cumbersome testing approval process caused by regulatory obstacles, and the weak government crisis awareness caused by bureaucracy and leadership affairs, the United States failed to conduct large-scale testing of suspected cases in the early stage, making the

United States " One month is missing," and the best time to contain the COVID-19 was missed in vain.

Trump's conflicting messages often mislead people's thinking. He said in an interview that he instinctively downplayed the severity of COVID-19 because he did not want to create panic among the people. He took almost no action to promote the vaccine, but in January 2021, he and his wife were vaccinated.

On the other hand, the 10-month vaccination sprint from "Operation Warp Speed" to the breakneck pace of vaccination soon also shows the good side of American governance. Biden gave at least one vaccine shot to a quarter of adults during his 50 days in office, and 10% of them were fully vaccinated. No one is safe until everyone is safe. In the coming time, it is necessary to ensure that the vaccine is administered fairly and efficiently in the United States.

Given the breadth and depth found in the policy sciences, phased reviews can only reflect phased policy results, and policies also take time to play a full role.

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