



# General Vaccine Policy in the Post-pandemic Era—A Comparative Case Study of China and the USA

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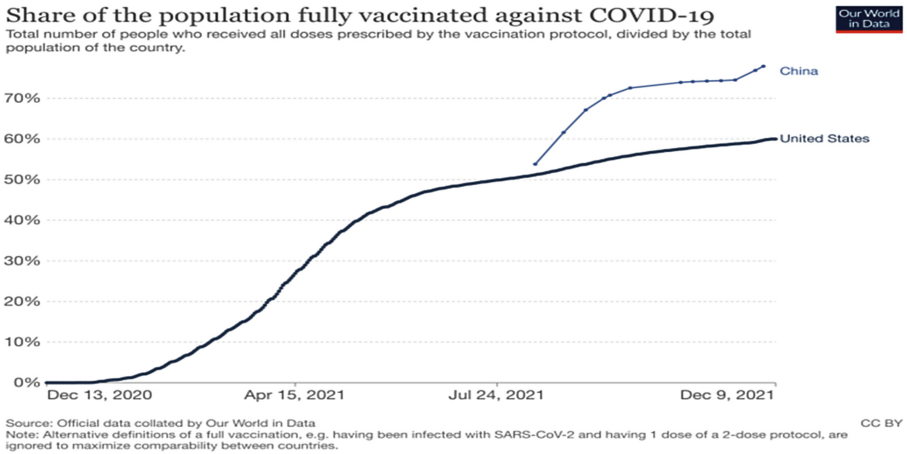
**Abstract.** China and the United States have very different policies to deal with the epidemic. However, what is common is that both countries are aware of the importance of vaccination and have made efforts to improve vaccination rates. This paper uses a comparative study to compare vaccine incentives in China and the United States. Are positive or negative incentives more likely to motivate people to get vaccinated? Although the domestic situation is different, it can be seen that positive incentives are not very effective. Negative incentives can greatly increase vaccination rates, but are more difficult to implement in the United States. In the future, further improving the vaccination rate in the United States and promoting and strengthening vaccination in China are the key to prevention. This study also provides some ideas for vaccine incentive policies in other countries, especially in developing countries where medical resources are more scarce.

**Keywords:** Vaccine Policy · Comparative Public Policy · COVID-19 Policy

## 1 Introduction

The COVID-19 pandemic, which has been affecting our lives for two years now, has been exacerbated by the emergence of the Delta mutant virus. Recently, a new virus called Omicron has become even more pathogenic. The WHO has long stressed the need to be vaccinated against COVID-19, and both the US and China have their considerations. How to improve the vaccination rate for COVID-19 has become a common problem [10].

China and the United States, the world's largest economies, have adopted two different systems of quarantine policy. Whether it is the policy of "zero tolerance" or "live with the virus", daily life in both countries seems to have returned to normal in the post-pandemic era. Regardless of the model chosen, both countries recognize the need for vaccination as research advances. Therefore, this paper aims to explore the current vaccine incentive policies in the United States and China and find an incentive method. As antibody levels of COVID-19 vaccines have declined over time, both countries are working on booster vaccinations, and now we are faced with the question of how do we increase the rate of a booster vaccination. Since the two countries have different vaccines, but both have been approved by WHO, it is assumed that the different vaccines have the same protective potency.



**Fig. 1.** Complete vaccination rates in the United States and China. (Photo CR: Our World in Data)

## 2 Vaccination Status and Importance

Vaccinating as soon as possible, as recommended by WHO, saves lives [6]. And the COVID-19 vaccine can provide strong protection against severe illness, hospitalizations and deaths. Vaccination also protects those around you from infection, especially those who cannot be vaccinated, such as infants and the seriously ill. In terms of daily prevention and control and community management, vaccination is a crucial step to improve governance. In addition, there is sufficient vaccine supply in China and the United States, and there is little need to consider vaccination priorities. All in all, improving vaccination coverage is an essential policy for both countries to control the epidemic.

According to the WHO, as of December 9, 2021, China's full coverage rate was 74.07%, compared with 58.35% in the United States [1]. Referring to Fig. 1, China has a full coverage rate of 77.9%, while the US has a full coverage rate of 59.99%. According to Zhong Nanshan, an infectious disease specialist, 83.3% of the population still need to be vaccinated against the virus. China appears to be getting close to that goal, but the vaccination rate may need to be further increased to deal with the Omicron virus, and the USA still needs to continue to improve vaccination rates. Despite this, both China and the United States have maintained high vaccination rates worldwide due to policies adopted by their governments to encourage vaccination.

## 3 China's Policy to Encourage Vaccination

### 3.1 Negative Encouragement

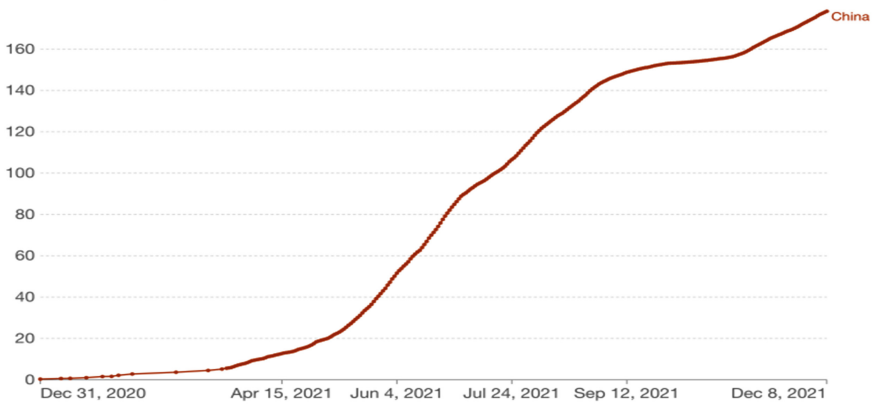
China implements a voluntary free vaccination policy, but has always been encouraging people to get vaccinated [10]. The government has set two priorities for early vaccination in the early stage. First, priority should be given to vaccination in key areas, such as port cities, border areas, large and medium-sized cities with a high risk of outbreaks, and areas where outbreaks were concentrated in the past, to reduce the risk of outbreaks.

Second, China's National Health Commission (NHC) ensures that priority groups are vaccinated first, reducing the risk of transmission. For example, cold-chain workers, medical and health personnel, staff in public institutions, teachers and students in universities, supermarket service personnel, and transportation personnel are more likely to be exposed to the virus or a large number of people in their daily work. In addition, the government has created digital applications such as health codes to record everyone's vaccination status, which can prevent errors and get an accurate picture of vaccination across the country. At the same time, this can control the country's vaccine supply, and facilitate timely deployment. Given the short time since the COVID-19 vaccine has been on the market, much of the public is concerned. Therefore, more and more people across the country are called upon to step up positive publicity and media campaigns on vaccination. At the same time, there are also some methods with Chinese characteristics, such as calling on Chinese communists to take the lead in vaccination to dissuade the masses from encouraging, which can be much more effective in China's society. It is worth noting that China's local governments and grassroots cadres have made great efforts in epidemic prevention and control.

In China, local governments carry out specific work through specific measures in accordance with the overall policies of the central government, and the situation may vary from place to place. At this point, however, the policy has gradually shifted to passive encouragement. In many cases, relying solely on volunteers or community workers for encouragement is ineffective. Local governments have begun taking different measures to implement the central government's request to increase vaccination rates. To some extent, vaccination rates have also become an indicator of local government performance. Of course, positive encouragement is the most important. In Beijing, for example, employees in stores will be labelled green if they achieve a high vaccination rate, which can attract more customers. In areas with better economic conditions, such as Shanghai, communities give residents gifts to encourage them to get vaccinated, such as eggs, milk, rice and other daily items. That may also be one reason for Shanghai's high vaccination rate, which was about 85% in the early days. However, vaccination policies have been repeatedly tightened for most places due to negative incentives. The overlapping vaccination policies have caused some negative feelings. For some civil servants, not getting vaccinated could mean no salary in some provinces, as the local treasury pays their salaries. Other restrictions in public places have also begun to emerge, such as the inability of unvaccinated people to enter public places such as shopping malls and hospitals and, more seriously, some communities claim that they are not allowed to enter without being vaccinated against COVID-19. Since it is easy to know through mobile apps whether a person has to be vaccinated or not, the situation will worsen after the Health Law comes into force. In some places, if you are not vaccinated, you must provide a negative certificate of nucleic acid test every seven days to enter the company, etc. Earlier this year, the price was 80 yuan per test. Although it has dropped to 70 yuan, weekly testing is still a high cost. These "local policies" encourage more and more people to get vaccinated economically. China's National Health Commission quickly realized the situation and announced its opposition to mandatory vaccinations. The central government has always maintained a voluntary vaccination policy. Still, these local government initiatives, especially at the community level, have significantly increased

### COVID-19 vaccine doses administered per 100 people

Total number of doses administered, divided by the total population of the country. All doses, including boosters, are counted individually.



Source: Official data collated by Our World in Data

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**Fig. 2.** COVID-19 vaccine doses administered per 100 people in China. (Photo CR: Our World in Data)

China's vaccination rates, indeed implementing the national policy of "vaccinating all that needs to be vaccinated". Another level of negative encouragement is associated with the occasional confirmed case.

As shown from Fig. 2, after April, the injection dose began to increase significantly, while the inoculation dose began to rise sharply in June, which may be related to the epidemic in Yunnan Ruili in April and Guangzhou at the end of May. Because China has adopted strict restrictions and a "Zero Tolerance" attitude in the outbreak areas, which will bring a lot of inconvenience to everyday life, such as enclosed management [4]. In addition, the government continues to publicize the danger of the epidemic and virus. These can also be seen as negative encouragement.

### 3.2 Vaccination Policy for Adolescent Children and the Elderly in China

It is worth noting that mass vaccination is focused on people aged 18–59. However, with the spread of vaccination, vaccinations for the elderly and children are also on the agenda. For COVID-19 vaccine development in 2019, approximately 20% of people over 60 years of age remain unvaccinated against COVID-19, representing approximately 50 million people. In order to encourage elderly people to get vaccinated, the NHC requires the local government to improve vaccination service, using the case files to control the situation of the elderly. Furthermore, community cadres are required to check the elderly within three days of vaccination, continuing to increase awareness of the dangers of COVID-19 and the need for vaccination. There are also negative incentives in some places. For example, vaccination is linked to pensions and low income, violating the principle of voluntary vaccination. Of course, there are some favourable policies, such as opening special vaccination channels for the elderly, or picking up the elderly by community workers. At the same time, vaccines for children aged 3–11 are also being carried out orderly. For eligible children, vaccines should be completed by the end of the year. A

slight difference is that the National Health and Family Planning Commission stresses the need to pay attention to children's emotions, as children are prone to psychological reactions.

## 4 The US'S Policy to Encourage Vaccination

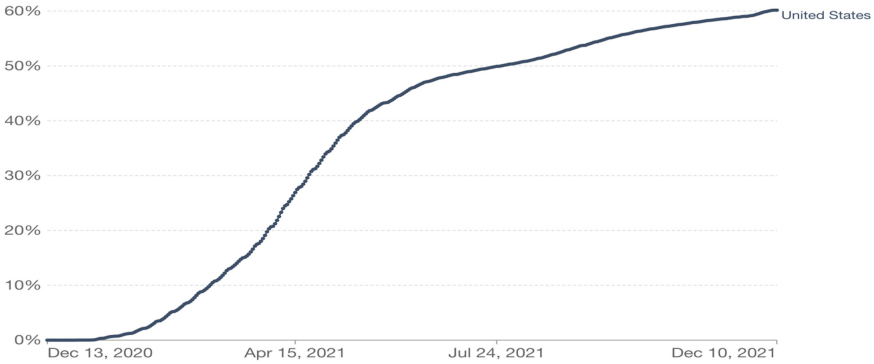
### 4.1 Positive Encouragement

On September 9, 2021, President Biden signed two executive orders requiring all government employees to be vaccinated against COVID-19 and opt-out without regular inspections. Mandatory vaccination or weekly nucleic acid testing should be implemented for more than 100 employees businesses. Federal workers who do not receive COVID-19 vaccines within 75 days will be fired, implying that positive incentives have limited effects. To increase vaccination rates, the Biden administration began a mandatory vaccination campaign. However, since the US is a federal system, state governments quickly opposed the ban. On 9th December, the Senate passed a bill to block Biden's Vaccine Mandate, indicating that this compulsory order will not boost the COVID-19 vaccination rate. But in fact, the U.S. has launched a series of aggressive incentives [5]. The Center for Disease Control and Prevention (CDC), the agency responsible for controlling the COVID-19 outbreak, has formulated a lot of policies to increase vaccination rates. They have increased the demand for vaccines by reaching out to regular contacts and encouraging them to do so. They employ staff and volunteers at the community level to inform the public about vaccines.

It should be noted that they can also provide at-home vaccination for vulnerable groups such as the disabled, the elderly or those in remote areas through working with local pharmacies and medical centres [2]. The CDC first encourages employers to schedule vaccinations for their employees in the workplace. Later, they also worked with the Chamber of Commerce to vaccinate in the workplace. In addition, companies can provide some benefits, such as days off or bonuses, to meet employees' needs, but the CDC doesn't have the authority to require employers to do so. On the other hand, they also hope that the stores will offer some benefits, such as gifts or coupons, to the vaccinated public. In schools, they train a group of vaccine advocates in the school, and the CDC asks school leaders, including teachers, Parent Teacher Association (PTA) members, principals, and superintendents, to share their positive vaccination experiences and promote vaccination campaigns [2]. With positive guidance, more school children can be vaccinated. In addition, they have set up a number of vaccination campaigns to promote vaccination among students. Unlike China, the United States has many religious people, and the CDC has asked those religion leaders to encourage them to get vaccinated rather than fight against scientific methods. In addition, they are asking religious leaders to vaccinate publicly and share their feelings with believers, which can expand their influence. This can be seen as positive encouragement to many believers. The CDC's efforts to increase vaccination rates can also be seen at amusement parks or beaches, where people can get vaccinated without appointment in advance. In addition, CDC works with various organizations to provide benefits for people, such as providing child care. The Chinese Center for Disease Control and Prevention also works to increase vaccination rates by organizing cultural and sports events to attract people to participate and

### Share of the population fully vaccinated against COVID-19

Total number of people who received all doses prescribed by the vaccination protocol, divided by the total population of the country.



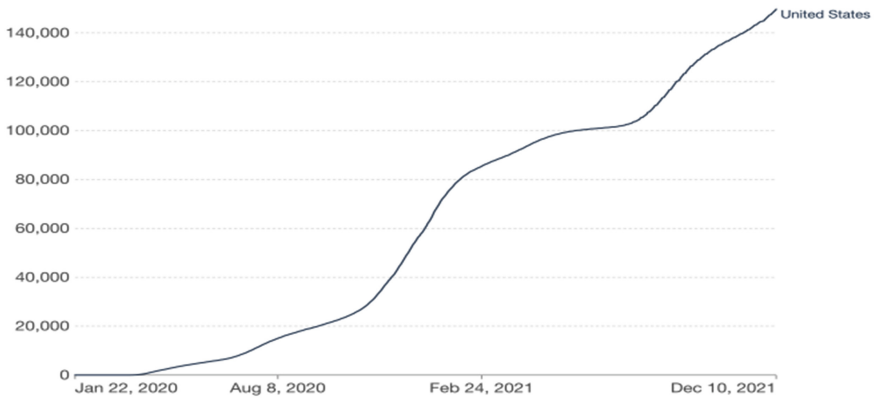
Source: Official data collated by Our World in Data  
 Note: Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a 2-dose protocol, are ignored to maximize comparability between countries.

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**Fig. 3.** Share of the population fully vaccinated against COVID-19. (Photo CR: Our World in Data)

### Cumulative confirmed COVID-19 cases per million people

Due to limited testing, the number of confirmed cases is lower than the true number of infections.



Source: Johns Hopkins University CSSE COVID-19 Data

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**Fig. 4.** Cumulative confirmed COVID-19 cases per million people. (Photo CR: Our World in Data)

provide vaccinations. There are also incentives for vaccinations and cultural institutions in the country, such as museums. Those who complete the vaccination can visit for free. In addition to national efforts, there are many positive incentives from state and local governments. Some states, such as West Virginia, Maryland, Chicago and Detroit, offer financial incentives directly to their citizens to get vaccinated in bonuses, bonds and debit cards.

According to Figs. 3 and 4, vaccination in the United States showed a high starting point and common development trend, and people’s enthusiasm for vaccination gradually

decreased. On the one hand, positive motivation has gradually lost its effect. On the other hand, the increasing number of confirmed cases has cast doubt on the vaccine's limited effectiveness. The U.S. government set a goal of vaccinating at least 70 per cent of adults against COVID-19 by July 4, but it did not meet that goal. The U.S. government may start turning to mandatory vaccination mandates with these factors in mind.

#### **4.2 Vaccination Policy for Adolescent Children and the Elderly in the USA**

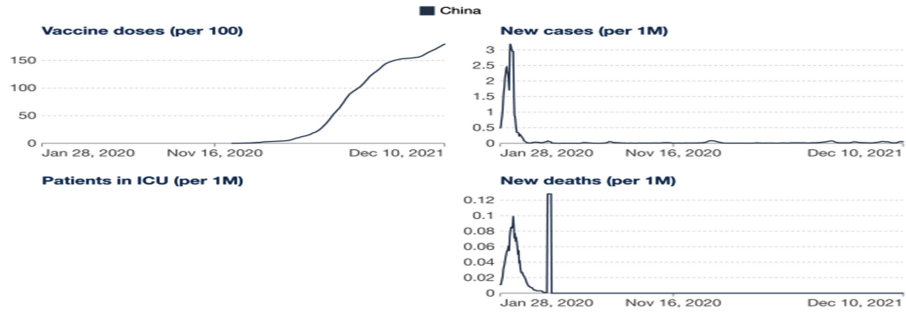
The U.S. government is also promoting vaccination for children and adolescents, and state and federal governments have lowered the minimum age for vaccination. Alaska became the first state to allow vaccination for 16–17 year-olds on March 9, 2021. Subsequently, the U.S Food and Drug Administration (FDA) approved Pfizer's vaccine for use in children aged 12–15 on May 10 of that year. According to the data from the CDC, 64.5% of children aged 5–12 years have completed the vaccination, and 70.2% of adolescents aged 12–18 have completed the full course of vaccination [3]. The CDC promotes youth vaccination from families, health care providers and schools, mostly through education. Studies have shown that the risk of severe disease from contracting COVID-19 increases with age, and the United States has taken the lead in promoting vaccination for older adults. According to the data from the CDC, the current COVID-19 vaccination rate among people over the age of 65 in the United States is 87.1%. This has reached a very high level worldwide, as CDC works with many departments to provide vaccination assistance to older adults, such as home health agencies, geriatric nutrition programs, etc. [3]. These organizations can follow specific guidelines.

### **5 Comparison Between China & U.S.A**

As can be seen from Fig. 5, with the gradual increase in vaccine coverage rate, the epidemic situation in China is stabilizing, while the new cases in the United States are still on a high growth trend. After mass vaccination began in mid-November 2020, severe illness and death rates in the United States dropped significantly. Still, they rebounded after December, possibly due to the emergence of the new virus-Delta virus. In China, severe illness and death fell back to almost zero [4]. The vaccine policy is an essential part of the epidemic prevention policy, but it needs to be matched with other policies, such as China's strict entry policy, to contain the outbreak [9].

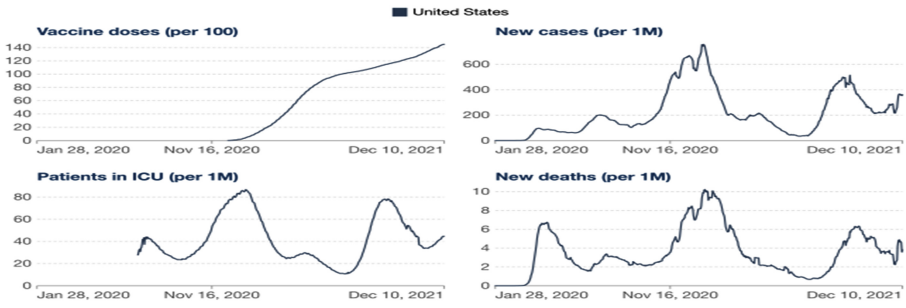
Similarly, both governments are aware of the importance of vaccination and have compared their vaccine policies [6]. Both prioritise positive incentives and offer free vaccinations to reduce the burden on citizens. Although the opening hours are different, the age range at which vaccinations are allowed has also been agreed upon. However, due to differences in values and governing styles, China's party members and grassroots cadres show active encouragement, while the United States relies on religious leaders or celebrities [10]. China is moving towards negative incentives at the local level, while the United States has trouble enforcing the central ban. However, by comparison, negative stimuli appear to be more effective in increasing vaccination rates. That's probably why Biden signed the vaccine authorization. WHO also suggests that compulsory vaccination

**COVID-19 vaccine doses, ICU patients, and confirmed deaths**  
 Limited testing and challenges in the attribution of cause of death means the cases and deaths counts may not be accurate.



Source: Official data collated by Our World in Data, Johns Hopkins University CSSE COVID-19 Data CC BY

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Source: Official data collated by Our World in Data, Johns Hopkins University CSSE COVID-19 Data CC BY

**Fig. 5.** COVID-19 vaccine doses, ICU patients, and confirmed deaths between the United States and China. (Photo CR: Our World in Data)

is a last resort. China does not need to rely on compulsory vaccination for the time being, as current attempts in the US have failed.

In addition, in the face of an increasingly complex outbreak, both countries have proposed a third booster dose. The US has a higher vaccination rate than China and opened up earlier than China. Because of China’s large population, increasing vaccination rates remain a daunting task. In contrast, the United States should continue to raise awareness and maintain a high rate of booster injection growth.

Moreover, the epidemic is not a problem for just one country or region. In low-income countries, only 7.1 per cent of people have received at least one dose of vaccine. As big countries, both countries should help other countries as much as possible. For China, it is impossible to close its door forever, and assisting other countries to control the epidemic is a prerequisite for future opening-up. The United States should also help developing countries to prevent the situation at home from worsening.



## 6 Conclusion

Generally speaking, it is imperative to improve vaccination rates [6]. China and the United States have tried many approaches and achieved some success [8]. Negative encouragement seems to be more effective. The U.S. should continue to improve the vaccination rates in the future, while China should promote booster vaccination as soon as possible. In addition, more help should be provided to developing countries, whose impact on all aspects of the epidemic is devastating.

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