

# Vaccine Passports and COVID-19: Ethical, Scientific, and Practical Considerations

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## Abstract

The COVID-19 pandemic has drastically limited international travel. Now that vaccines have been developed, many countries are considering ways to rework lockdown restrictions so that travel may resume. One proposed strategy involves the implementation of vaccine passports, which would allow those with digital or physical certification of COVID-19 vaccination to resume unrestricted travel. The introduction of such passports involves a number of important ethical, scientific, and legal considerations. This piece aims to elucidate some of the challenges and consequences regarding the use of vaccine passports, such as practical concerns about the length of vaccine immunity and post-vaccine viral transmissibility. Vaccine passports may also have damaging effects on those without adequate vaccine access, especially given the context of COVID-19 having already exacerbated harm towards disadvantaged and minority communities.

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Since the early months of the pandemic in 2020, the SARS-CoV-2 virus has drastically reduced the ability for international travel, significantly restricting peoples' movement. The WHO declared COVID-19 a pandemic on March 12, and by the end of April, many countries had completely closed their borders as numbers of cases and deaths continued to increase (Uğur & Akbıyık, 2020). While reduced mobility has been necessary to contain the spread of the virus, it has also had many detrimental economic and social effects, including tourism crises and massive job losses, among multiple others (Baldwin & Weder di Mauro, 2020). Governments have struggled with controlling the virus as well as adapting to a world in which international

travel is highly restricted and discouraged, and the attempts to implement social distancing rules and orders have been met with mixed success. While lockdowns have been effective in slowing the progression of COVID-19, this is considered only a temporary solution and may be unsustainable if countries' economic growth is to be preserved (Brown et al., 2020).

Prior to the development of a vaccine, many countries considered the use of immunity passports – official documentation of whether or not an individual has been infected and is thus allegedly immune to SARS-CoV-2 – in order to mitigate some of these effects. Several nations, including the United Kingdom, Germany, Italy, and Chile, have seriously considered introducing immunity passports, though the concept

never came to fruition (Voo et al., 2021). Now that COVID-19 vaccines have been produced and are being mass-distributed in a number of nations, the idea of a vaccine passport is more prevalent than ever, and some even consider it inevitable as countries become increasingly desperate to avoid travel restrictions and return to a semblance of normalcy (Schlagenhauf et al. 2021).

The use of vaccine passports comes with a number of considerations and risks. First, a vaccine passport would be beneficial by enabling international travel and decreasing the likelihood of contracting COVID-19 while abroad, which would otherwise burden international hospitals that are likely already understaffed. Additionally, vaccine passports may provide added incentive among the general public to receive the vaccine. However, some argue that there are more beneficial ways to ensure compliance with vaccination, such as educating the public, rather than providing the incentive of a passport, which will disproportionately target those who desire or require international travel (Phelan, 2020).

This is not the first time the idea of an immunity or vaccine passport has been considered; health certification was previously implemented in the context of yellow fever, which began with a vaccine certificate utilized by the WHO in 1969 and updated as recently as 2005 (World Health Organization, 2020). Certain countries require that travelers have a certificate proving that they have been vaccinated against yellow fever prior to travel, known as an “International Certificate of Vaccination or

Prophylaxis” (ICVP) (National Health Service Vaccination, 2020). However, even with extensive knowledge about the yellow fever vaccine, ethical issues persisted with the use of ICVPs. Numerous ethicists have shown how immunity to yellow fever in the 19<sup>th</sup> century was used to “justify white supremacy,” in which presence or lack of immunity determined rights to marriage, employment, and other facets of socioeconomic power (Kofler & Baylis, 2020). Requiring documentation of COVID-19 vaccination could similarly become a method of increasing the discrimination and racial inequities that the virus is already inflicting on marginalized and underrepresented groups (Voo et al., 2021).

Systemic racism is apparent throughout international healthcare systems, and policing individuals for vaccine documentation will surely open doors to even further racial profiling (The Lancet, 2020). Historically, forms of policing have been known to disproportionately affect people of color; this has only been worsened by COVID-19. For example, when social distancing laws were implemented in Brooklyn, New York from mid-March until May, the majority of people arrested for violation of social distancing laws were black (Kofler & Baylis, 2020). In other parts of the world, China also mandated during the pandemic that all African nationals be tested for COVID-19. According to Schlagenhauf et. al, current restrictions to vaccine access demonstrate that poorer nations and minority groups are likely to have a much slower vaccine rollout (2021). It is therefore

likely that not only will it be more difficult for people of color to obtain vaccine passports, but also those who do obtain them will be unfairly scrutinized or still denied travel on the basis of race (Kofler & Baylis, 2020). Experience with the vaccine thus far has shown that those who possess greater wealth or power have far less difficulty getting vaccinated (Brown et al., 2020). The social stratification that would come with labeling people on the basis of their vaccination status would create issues in which those who lack vaccine certification are heavily stigmatized; of course, this inability for certain individuals to obtain vaccine certification would likely be due to circumstances out of their control, such as racial and socioeconomic disparities (The Lancet, 2020). Previously, discrimination on the basis of health status has been demonstrated with regards to HIV; those who are HIV-positive face numerous restrictions to live and work in international locations such as Egypt and Singapore. A similar situation is possible with COVID-19, in which unfair international restrictions are placed on those coming from countries that are unable or unwilling to implement a vaccine passport system (Kofler & Baylis, 2020). Furthermore, trust in healthcare amongst minority populations has significantly decreased since the start of the pandemic and forcing this populations' reentry into society to be contingent upon vaccination may increasingly erode this already fragile relationship (Persad & Emmanuel, 2020).

The use of digital or physical vaccine passports also presents issues of both legitimacy and privacy. While an electronic document is more difficult to falsify, electronic devices or apps allow collection of personal information not only related to COVID-19, but also regarding location, travel, and medical history (Persad & Emmanuel, 2020). Countries such as China and Taiwan are already monitoring the movement and allowance of people to enter various public spaces via digital QR codes and smartphone apps. According to the New York Times, there is an apparent lack of transparency in how China's health apps are being used for supervision. An Alibaba-backed government-run app in China, known as Alipay, is used to support decisions about who should and should not be quarantined because of COVID-19; however, the app is also presumed to share personal information with the police (Mozur, Zhong, and Krolik, 2020). Health information is traditionally handled by specific government organizations, such as the U.S. Department of Health and Human Services or the National Health Service in England, and the use of vaccine passports could allow that data to be given to private companies and organizations, posing a serious ethical issue (Ienca & Vayena, 2020). Use of a digital passport would also require access to a smartphone (Kofler & Baylis, 2020). Additionally, the distribution of the vaccine is currently limited to specific populations, and until it is made universally and freely available to the general public, allowing others to travel may have unintended

consequences, such as the development of a vaccinated global elite (Brown et al., 2020).

Even if one found ways to mitigate these ethical issues, the science behind the vaccine itself questions the validity of vaccine passports. The available COVID-19 vaccines are administered via injection and aim to instill immunological memory, such that subsequent exposure to the SARS-CoV-2 virus will illicit an immune response strong enough to curb an otherwise potential serious disease course. While vaccines have shown 72-95%+ efficacy in clinical trials in preventing symptomatic COVID-19, researchers are still unsure about how long this immunity lasts (Katella, 2021). Importantly, experts are also unsure about whether or not people who have been vaccinated maintain the ability to transmit the virus and infect others (Phelan, 2020). The WHO has stated that not only are vaccines in limited supply, but it is simply not clear how vaccination will impact cross-border spread since we do not know if vaccinated individuals can transmit the virus, even if they themselves are asymptomatic or unaffected by it. Early data from preliminary studies of at least some vaccines have suggested a reduction in transmission potential. For example, a small group of people who were infected with SARS-CoV-2 in the period after receiving their first dose of the Pfizer vaccine showed a significantly lower viral load, suggesting reduced infectiousness (Mallapaty, 2021). However, there has been no evidence for full elimination of SARS-CoV-2 transmissibility. Preclinical studies have shown that the virus

can persist in nasal swabs even after the mRNA vaccine administration, suggesting that vaccinated patients can indeed become infected and transmit COVID-19 through respiratory droplets or aerosols (Bleier, Ramanathan, & Lane, 2021). Given this substantial gap in our knowledge of viral transmissibility, it would be unwise to promote the use of vaccine passports.

As an alternate solution, some have suggested testing all passengers for COVID-19 infection prior to embarking on travel and specifically testing those who can present a vaccine certificate in order to further ensure that they are not carriers of COVID-19. However, this also comes with its own set of problems and complications, including the vast range of independently authorized tests, the need for verified labs, and the requirements for mutual assurances among countries. Errors in the serological testing process may have severe public health implications, such as false-negative individuals infecting others (Phelan, 2020). Testing may be valuable in determining the spread of the virus, but both the WHO and FDA advise against using serological tests to allow or deny travel, regardless of vaccination status, given the variations in sensitivity and specificity allowing for higher rates of false negatives and false positives, respectively. The sheer number of tests that would need to be administered may pose practical limitations to this option as well, similarly to the lack of unlimited supply of vaccines (Kofler & Baylis, 2020).

At present, the use of vaccine passports would be problematic due to the

ethical and practical challenges involved, including, perhaps most importantly, their great potential of exacerbating harm towards racial and underrepresented groups. It is likely that individuals who need access to vaccine passports most desperately – those who are economically disadvantaged or struggling to return to a more stable, safe environment after months of unemployment – will find the most difficulty in obtaining such a document. Moreover, given our lack of knowledge about how long post-vaccination immunity lasts as well as the extent to which transmission is possible even after vaccination, the implementation of vaccine passports may very likely do more harm than good. Perhaps as our understanding of viral immunity – secondary to either previous infection or vaccination – evolves, countries can eventually allow more widespread travel. Until then, the challenges posed by implementing vaccination passports seem to outweigh the benefits. These difficulties must be carefully considered with effective solutions in order to make the use of vaccine passports, if implemented, as favorable and successful as possible in the future.

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