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Mandatory Vaccination and Green Passes

Review of International Experience

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Introduction

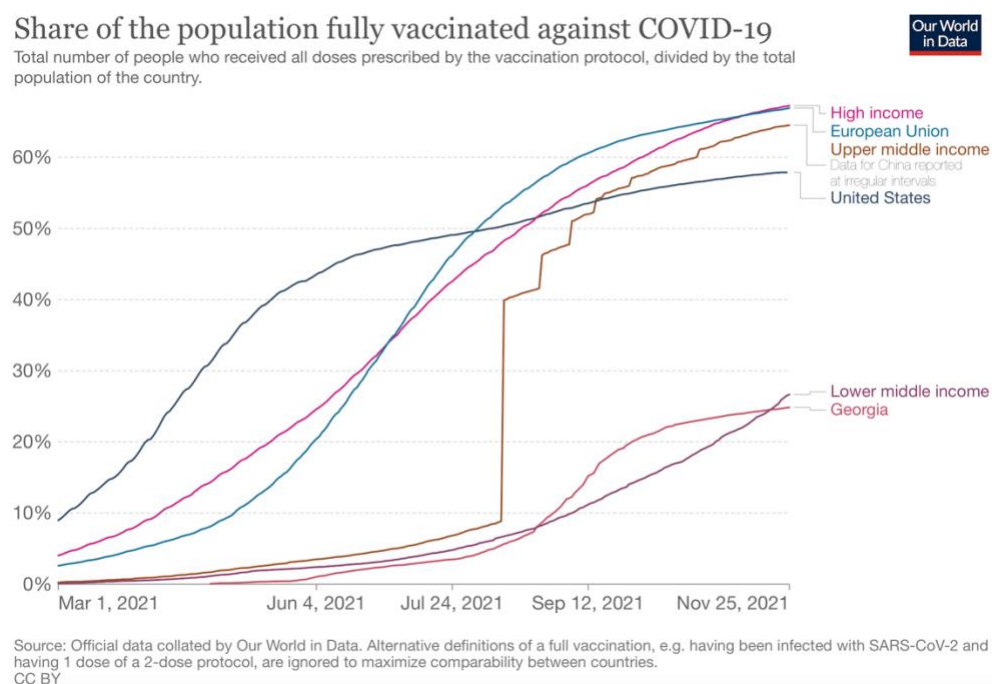
A global rollout of vaccinations against COVID-19 started at the end of 2020 and has been continuing at different rates in different countries (1). As of 25 November 2021, there have been 8 billion doses administered globally with 29% of the world's population fully vaccinated (2).

Vaccination against COVID-19 in Georgia started on March 15, 2021. A target vaccination rate is set at 60% of adult population to be reached by the country at the end of 2021 (3).

According to the National Center for Disease Control and Public Health, 34.6% of the adult population (26.5% of the total population) was fully vaccinated by November 25.

Georgia lags far behind the target set by the national plan as well as the average rate for countries pertaining to the same income group and approaches the vaccination rate of lower-middle income countries.¹ (see Figure 1).

Figure 1. Share of population fully vaccinated against COVID-19



In countries where vaccine access barriers have been addressed vaccine hesitancy is the leading cause of poor vaccine uptake (4). According to a study conducted in Georgia, one third of the unvaccinated population is vaccine hesitant and this didn't change between March and August 2021 (5). The same study shows that only 12% of the population are the so-called COVID-deniers who have low acceptance of vaccination and low perception threats associated with coronavirus infection. 22% of the population have a low intention to get vaccinated and worry about vaccine effectiveness, yet another 33% who also have low intention to vaccinate against COVID-19 are careless about their health, live in cities and belong to the middle age group.

¹ According to the World Bank classification, Georgia belongs to the upper-middle income countries

To increase vaccination rates after addressing vaccine access barriers countries use various strategies including community-oriented measures as well as communication activities targeting selected groups of population. Many countries opted for additional measures based on incentives and sanctions (6). In parallel to incentives Georgia has introduced restrictive measures as well.

By the decision of the Interagency Coordination Council of November 8, 2021, Georgia launched a green passport to come into force on December 1. Green status is granted to citizens who are fully vaccinated, have a negative PCR test valid for 72 hours, have a negative rapid antigen test valid for 24 hours, or have recovered from COVID-19. Requirement to present a Green Passport applies to individuals from the age of 18 and is extended only to customers of eateries, restaurants, indoor cafes and bars; cinemas, theatres, operas, museums, concert halls, entertainment centers, casinos and gambling centers; spas, fitness centers, hotels and cable lifts of ski resorts (7).

The purpose of this document is to review the experience of countries that have introduced mandatory vaccination and / or green passports in order to increase vaccination rate and vaccine uptake. We also intend to consider these two interventions as potential means to further increase vaccine uptake in Georgia.

Methodology

Definitions

Mandatory (compulsory) vaccination is defined as a legally established vaccine mandate to perform professional activity without which the commencement or continuation of activities is restricted and / or sanctioned.

A green pass (passport) is a document certifying vaccination or equivalent status, without which the use of a particular service is restricted. A green pass holder is defined as a person posing low risk of spreading COVID-19 infection (8).

Evidence Search

An analytical framework was developed to conduct search and collect following information by countries of interest: conditions of regulation, scope of application, grounds for introduction, preceding measures, evidence for introduction, date of announcement, date of entry into force, positive and (possible) negative effects, including impact of green passes on national economies, and enforcement of regulation.

Graphs with trends of country-specific vaccination rates were taken from the web-platform – Our World in Data (9) and processed by putting important intervention dates on them to make judgements about their impact on the dynamics of vaccination.

The literature search was conducted on the Google web-platform from October 25, 2021 to November 1, 2021. In the result of our search and based on careful selection of reliable sources we collected information on 13 countries for our review of mandatory vaccination. These countries include New Zealand, Canada, Italy, France, United Kingdom, United States, Saudi Arabia, Greece, Australia, Costa Rica, Kazakhstan, Azerbaijan, and Ukraine. We used news media (Reuters, CNN) and government websites as well as the academic research databases – Pubmed, Nature and others – to search for literature.

As for green pass regulations, we selected 15 countries with a diverse economic income in which green pass rules were implemented to some extent (Wales, Scotland, Italy, France, Germany, Austria, Denmark, Switzerland, China, USA, Israel, Brazil, Kazakhstan, Ukraine, Azerbaijan). Scientific papers as well as government reports and media articles were used as our reference materials.

In many cases, it was not possible to find evidence (studies) based on which countries decided to introduce vaccine mandates and/or green passes. We found only one research describing the outcomes of green pass implementation.

Following the spread of the Omicron strain,² we conducted a rapid review of collected information to reflect regulatory changes implemented by the studied countries.

Legal Aspects

Mandatory vaccination (unless there is a medical contraindication) has been supported by the supreme courts of England and the US as a measure of public interest since the 19th century (since the outbreaks of Smallpox). Compulsory vaccination has been introduced in some European countries (e.g., France, Italy,

² The new SARS-CoV-2 variant: B.1.1.529 (Omicron) was first detected in a specimen taken on November 8 in South Africa, it was reported to WHO on November 24, and it was designated a variant of concern (VOC) on November 26.

Czech Republic) in relation to the routine immunization of children (10). Since 2019 mandatory vaccination in Georgia has been introduced for children and occupational groups (11).

In 2021, the European Court of Human Rights accepted a number of claims to suspend mandatory vaccination against Covid-19. However, the Court rejected these claims. The European Court of Human Rights, when assessing this issue from a human rights perspective, considers the approach of modern medicine, according to which vaccination is the most effective and safe of the available methods of combating communicable diseases and makes a decision considering individual's life and health as well as public health perspectives. In addition, the European Court of Human Rights empowers states to make their own decisions on voluntary or mandatory vaccinations considering challenges faced by them (12).

Findings

Mandatory Vaccination

In most reviewed countries vaccination mandate was introduced in steps once preceding measures failed to produce further improvements in vaccination rates. Mandatory vaccination applies to specific groups and implies full vaccination by a set deadline. In some cases, after the announcement of the intervention dates for the first and second mandatory shots were given in stages and the special measures were mandated only upon the expiry of these deadlines.

Most frequently the vaccine mandate covers health workers (New Zealand, Italy, France, Azerbaijan), social workers (UK, Greece) and people employed at educational institutions (schools) (Ukraine, New Zealand) (12–18). The health and social sector workers include staff employed in medical as well as long-term care facilities. A number of countries have introduced mandatory vaccinations for civil servants - Canada, Saudi Arabia, Ukraine, Azerbaijan, Costa Rica, Australia (14–19).

What does mandatory vaccination imply? The intervention provides for a gradual implementation of the following measures if a person does not get vaccinated: 1) transfer to remote work if the employee's position allows it; 2) if this is not possible, put on a paid leave and then unpaid leave from 20 days to one year; and 3) temporary suspension from employment (until the provision of a vaccination certificate). Dismissal as a measure of last resort is practiced only in Ukraine and Saudi Arabia (13,14,19,20). The latter is seen as a measure restricting fundamental human rights and is not supported by other countries.

Evidence. In most cases, we could not find evidence supporting decisions on vaccine mandates – no specific statistics or studies have been found which could serve as a basis for such decisions. For two countries (Italy, Greece) we found studies conducted prior to the introduction of the measure that might have been used for decision-making.

An article published in Italy (20) which clearly supports the vaccine mandate for healthcare workers substantiates its compulsory nature by the need in protecting public safety for all, including patients as the most vulnerable segment of the society. However, even the authors of the article argue for the right of freedom of treatment in Italy to which mandatory vaccination is exactly in conflict with.

In Greece, a survey conducted in October 2020 showed that the majority of Greek citizens supported mandatory vaccination (74% of respondents) and intended to get vaccinated (62%) (21). These were mostly driven by utilization of preventive services and trust in healthcare authorities. According to the authors, the revealed proportions (74% and 62%) indicate that there is a need to intensify evidence-based messaging by healthcare providers to inform the public on the risks and benefits of vaccines.

Vaccination has already been mandatory for care home staff in the UK. Starting from April 2022 the vaccine mandate will be introduced for the entire healthcare sector. The British Medical Association to conduct an impact assessment to estimate how many staff might quit the job for refusing to vaccinate (22).

A bill has been drafted in Germany, which envisaged the introduction of mandatory vaccination from February / March 2022 (23).

Grounds for introduction. In most reviewed countries except for Kazakhstan and Saudi Arabia the intervention was introduced at a higher vaccination rate than it was reached in Georgia (as of the introduction dates). Reasons given for introducing a mandatory vaccination include: the aggravation of the epidemiological situation (Azerbaijan), the spread of the so-called delta strain (Kazakhstan, USA) (12, 25,26) and the maximization of vaccination rates (New Zealand, Greece) (15,16).

Preceding interventions. In a number of countries, mandatory vaccination was not the first intervention to increase a vaccination rate meaning that these countries took various measures before introducing a vaccine mandate (incentive programs and mobile vaccination teams in the US, offering money and mobile internet in Ukraine, etc.)(16, 18, 25).

Most countries started to actively introduce compulsory vaccination in autumn of 2021. However, some countries have introduced this regulation since summer (Kazakhstan, Greece) (25,26). In Italy, a vaccine mandate was introduced in March (along with a green pass) and gradually extended to all sectors (27).

Outcomes. In most cases, no information was found on the results achieved after the introduction of the regulation. In some cases, this is due to the fact that regulations were announced in autumn meaning that in the countries studied a vaccine mandate has not been enforced yet or little time has passed since its enforcement (Eg New Zealand and Canada from October, Ukraine from November)(13–15). As for Italy, although the introduction of a vaccine mandate for healthcare workers in March 2021, (27) was followed by a sharp increase in the daily vaccination rates (9), it is difficult to clearly establish a causality between the intervention and the observed result since the measure affected only one group of the total workforce for which its initial vaccination rate is unknown.

A number of negative consequences of a vaccine mandate have been revealed in the studied countries. There were protests which also concerned the introduction of green passes (France, Italy), a number of lawsuits were launched for the violations of labour rights (Canada). In France, 1-2% of healthcare workers were ready to give up jobs in order not to obey a vaccine mandate (28). Planned surgical interventions were cancelled / postponed in one of the hospitals in France due to lack of staff (temporarily suspended for failing to get vaccinated)(29).

Green Pass

Green pass requirements. Prior to the spread of the Omicron strain, most countries used the 3G approach³ to grant a green status meaning that an individual must meet at least one of the following conditions in order to get a green pass:

- *vaccinated with one or two doses, in 14 days after vaccination (28 days in case of using Johnson & Johnson vaccine) or*
- *negative COVID-19 PCR test valid for 24-72 hrs. or negative antigen test result valid for 24-48 hrs. or*
- *6 months after the recovery from COVID-19.*

However, we have encountered tougher approaches as well. For example, in some US states, a green pass is based solely on vaccination or testing status; According to Scottish regulation, green status will be granted only after full vaccination (30); At the beginning of October this year Israel decided to issue green passes to only to those getting booster shots (31).

Changes related to the spread of the Omicron strain to include tightening of rules, such as the switching from 3G to 2G, are described in a separate section. A green pass is available in mobile applications to get access to a unique QR code as well as in a paper form and both of these options are commonly used.

Timelines. The introduction and rollout of green pass mobile apps started in many countries in the first half of 2021, although the vaccine mandate for selected services was introduced mostly summer and fall of

³ 3G is based on the German terms geimpft (vaccinated), getestet (tested) and genesen (recovered); 2G - vaccinated or recovered

2021. The regulation came into force on average from two weeks (France, Germany) to two months (Switzerland) upon the official announcement (32).

Scope of Application. Green passes are mainly mandated at entertainment and mass gathering venues such as restaurants, bars and similar eateries, nightclubs, festivals, cultural and sporting events, gyms, museums, libraries, conferences, exhibitions, beauty shops, beauty salons and more. In some cases, a green pass is mandatory even for a hotel stay. Such policies have been implemented in Germany, Austria, France, selected Chinese provinces and Azerbaijan (33–37). In Israel a green pass is mandated also in places of worship (38) and France, Germany and selected Chinese provinces – additionally in health and long-term care facilities except for the emergency departments (33,35,36), whereas in Hawaii, USA a green pass is mandated at universities (39). The strictest regulation in this regard was imposed by Italy, according to which from October 15, 2021, a green pass is mandatory across country for all workers in public and private sectors to attend their workplaces (40).

In Israel, a green pass is mandatory for customers whereas it is up to employers to require a green status from employees. It is important to note that the restrictive measures (e.g., the use of masks indoors) still apply in the settings subject to green pass regulations (Israel).

Exemptions. A green pass mandate provides for certain exemptions which most often relates to impossibility of vaccination due to age limitations or medical reasons. However, exemptions may also apply to persons responsible for operation of entertainment venues, people working or volunteering in these facilities (30), and protesters (41). Age exceptions apply to those age groups in which vaccination is not yet authorized. In some countries this age is below 12 as in Israel and Italy (40,42) and in others – below 18 as in Scotland and Wales (30,41). Despite that fact that in Israel vaccination is allowed from 12 years of age green passes are still applicable to anyone over the age of three issued on the basis of a negative COVID-19 test result (42).

Grounds for Introduction. The four main goals highlighted by the countries when introducing mandatory green pass regulations, as one of the methods for combating the pandemic, are as follows:

- To reduce the risk of COVID-19 transmission in parallel to the expected rise in cases of seasonal flu as the autumn and winter approach (30,33,39,43);
- To reduce risks of severe illness and mortality and, hence, the future burden on the health sector (30,44,45);
- To maintain the operation of high-risk venues and to avoid severe restrictions and temporary closure of facilities (30,41,46);
- To increase the vaccination rate (30,41,47–50).

Preceding interventions. In most countries the introduction of green pass regulations was preceded by the adoption of basic measures, such as social distancing, hands cleaning, mask wearing, ventilating closed premises, leaving contact information when visiting catering facilities, and testing and placing in quarantine during international travel. In many cases, the mandatory green pass was introduced in stages, first in large public gathering places with a gradual extension to smaller venues and specific groups of population.

Evidence. Although for many countries we could not find evidence reviews developed prior to making decisions on new regulations in case of Scotland we found a comprehensive evidence paper which was developed by the Scottish Government before the introduction of green pass regulations (51). In case of the UK and Israel we found the paper reporting on the results of the study which applied the self-determination theory to investigate the undesired effects of local green pass regulations in two countries. At the moment of the study implementation green pass regulations had already been introduced in Israel and had not been in place in the UK (52).

Enforcement. Although in most countries the police are held responsible for controlling the enforcement of adopted regulations, there are some other approaches as well. In Switzerland, for example, where the resources of the police are limited, it engages only if facilities ask for assistance and the cantons are responsible for monitoring compliance (53). In Israel the police are more involved with checking the compliance of facilities rather than citizens and in Scotland venues are randomly visited by designated officers to check the compliance plan - and in some cases to step in to enforce it (54).

In some countries enforcement mechanisms turned to be rather ineffective. Specifically, soaring numbers of fake green pass certificates have become a serious problem in Ukraine, Kazakhstan and Azerbaijan (37,55,56).

Outcomes. The introduction of green pass regulation brought about a number of positive outcomes, in particular, an increase in the vaccination rate (Israel, Italy, France, Switzerland) (32,52,57,58), the reduction of confirmed cases (Israel) (59), a sharp increase in registrations for vaccination (Italy, France) (60,61), a record-high downloads of the “green pass” app (Italy) (57). At the same time, vaccinations have accelerated in the population groups that have already been motivated to get the shots. There was also an increase in age-specific vaccine uptake depending on settings to which the regulation was extended (youth - entertainment venues, middle age - hospitality business) (32).

In Scotland, where the green pass was introduced at fairly high vaccine uptake (75% of the total population vaccinated with the first dose), the daily administrations of the first dose of vaccine went up sharply upon the announcement of regulations, especially in the younger population (51).

The Oxford University study assessed the effectiveness of green passes comparing six countries (Denmark, Israel, Italy, France, Germany, Switzerland) that introduced certification to 20 control countries by means of synthetic control model. The study estimated what would have happened in virtually identical circumstances if green pass regulations were not introduced. According to the study, the introduction of green pass regulation had a positive impact on the vaccination rate. Vaccine uptake went up upon the announcement on average 20 days prior to implementation of the regulation with a lasting effect up to 40 days after. The increase was more pronounced when pre-intervention vaccine uptake was low. The introduction of new regulations in various countries led to an increase in vaccine uptake in the age groups of <20 and 20-29 years-old when regulations covered night clubs and big events. At the same time, when the regulations covered the entire hospitality sector vaccine uptake increased also in the age group of 30-49 years-old (32).

A review of information from different countries revealed that the introduction of the regulation had some negative effects as well. It should be noted that there was a sharp increase in the forgery relating to green passes. This is committed both by users (Wales, Italy, Azerbaijan, Kazakhstan, Ukraine) (28,37,41,55,56) and by vaccination service providers (Greece, Kazakhstan, Ukraine) (55,56); In Ukraine fake vaccination certificates are readily available to both locals and foreigners (55). In Ukraine and Kazakhstan there are cases of forgery based on direct arrangements with doctors in the result of which persons who are, in fact, unvaccinated end up in the state registry as holders of green certificates (55,56,62).

The introduction of regulations was followed by demonstrations in many countries (Israel, Italy, France) (31,58,60), and in Denmark citizens filed a petition against the mandatory passes (63). In Italy for some time registrations for the first dose went down with a sharp increase in demand for testing (57). In China people started to heavily criticize the government because of the imposition of regulations. (64), while in Kazakhstan and Scotland there was dissatisfaction with the queues due to the verification of green passes and there were cases of losing customers due to the requirement to present a green pass (65–67).

It is noteworthy that the amount of a fine for violating the regulation ranges from 135 to 10,000 euros, both for citizens and legal entities. The evidence paper developed by Scottish government prior to the introduction of new regulations gives details on additional economic costs for businesses that new regulations could entail (51). In particular,

- The need to recruit new staff to check certification.
- Procurement of additional technical equipment to automate the checking process.
- Cancellation of tickets and refunds
- Cost of additional staff to eliminate disorders due to long queues (at sporting events).
- Loss of customers if they choose to visit venues which do not require certification

The extent of these costs will vary across businesses, depending on their specifics and the scope to integrate them into existing staff functions. These costs will also depend on to what extent businesses are involved in the enforcement process, since business establishments are often held responsible for checking green pass certification.

Based to calculations made prior the introduction of regulation in Scotland, it was expected that the **economic impact** of green pass regulations would be less than that of the complete lockdown of facilities or the imposition of large-scale restrictions on citizens due to rise in COVID-19 rates. (51).

For example, the Scottish Government estimates that productivity fell significantly during the first lockdown in April 2020, namely by 77.0% in the hotel and catering sectors and by 42.6% in the arts, culture and leisure sectors. After imposing further restrictions in 2021, output of hotel and catering services fell by 30.5%. These figures highlight the potential economic losses that may result from harsh restrictions and the closure of facilities. (51).

No real economic impact analysis has been conducted in Scotland since the introduction of new regulations (18 October).

Various researchers believe that the introduction of mandatory green pass regulation may bring the following side effects (52):

- Deepened suspicions about vaccination among people having negative attitudes toward vaccination.
- Detrimental effects on people's autonomy, motivation and willingness to get vaccinated. it may be preferable to use messages of autonomy instead of applying pressure and external controls.
- Social polarization
- Decreased levels of public trust in the police due to involvement in control processes.

EU Digital COVID Certificate. The EU has launched the Digital COVID Certificate since 1 June 2021, which allows citizens and visitors of EU member states to move around the EU. The EU Digital COVID Certificate serves as proof that a person has been vaccinated against COVID-19, has recently received a negative COVID-19 test, or has recovered from infection in the last 6 months. Georgia joined the platform on November 15, which means that the country's Covid Certificate is valid for EU-wide travel.(68).

Regulatory Changes Related to Omicron

While countries quickly decided to tighten border controls to curb the spread of the Omicron strain inside their territories, below we will review only the changes concerning green passes and mandatory vaccinations.

Greece introduced a vaccine mandate for population above 60 years as a measure to counter the spread of Omicron variant. The regulation will come into force on January 16 (69).

From December 15, in France people above 65 years of age will enjoy a green pass only if they get a booster dose shot. It is planned to switch to the 2G rules of a green pass as well (70).

In Italy the green pass rules become stricter by introducing a so-called "Super Green Pass" which is similar to 2G pass. It is valid only for persons who are fully vaccinated or recently recovered from COVID-19 and applies to indoor catering facilities, bars, night clubs, movie theaters, gyms and stadiums. A basic green pass is used in hotels, intercity and public transport and workplaces. The changes will enter into force on the 6th of December (71).

2G and 2G+ passes have already been introduced in several states of Germany (where testing is an additional rather than an alternative measure). The Netherlands and Latvia are going to switch to 2G rules of the green pass as well. From December 15, Latvia also plans to introduce 2G rules for employees who need to attend their workplaces in person (71.72). Switzerland decided to expand the use of the green pass system starting from November 30 as well (66).

Country Examples

Below we describe the introduction of mandatory vaccination and green passes by presenting several country examples.

Italy

Italy announced a vaccination mandate in the early stage of vaccination roll out when COVID-19 outbreaks occurred among unvaccinated health workers while vaccines were available. By virtue of the decree of the Prime Minister of Italy as of April 1, 2021, vaccination has become mandatory for all health workers, including pharmacists. It has been stipulated that in case of refusal to the vaccination, a worker can be transferred to a position where the risk of infection transmission is lower or be suspended without pay for up to one year. According to the government, the aim of the measure was to protect as much people as possible in the environments in which they were exposed to the heightened risk of infection. The decree also introduces legal protection for those who administer the shots. The latter was demanded by the health sector representatives after medics were placed under investigation for manslaughter following the death of a vaccinated man in Sicily. (26). By the approval date of the decree 5.41% of the whole population had been fully vaccinated (2), however the share of vaccinated health workers at that moment is unknown. By September, well after the introduction of mandatory vaccinations in the health sector, about 1,500 doctors (0.3% of doctors) had still remained unvaccinated and about 700 of them had been temporarily suspended from work.

In Italy "certificazione verde" (green pass) is applied from the 6th of August 2021. The pass is required to enter museums and exhibitions, amusement and sports events, theme parks, spa centers and indoor catering facilities and, from September 1st for marine travel as well (28).

Notably, forged green passes have appeared in Italy. They were sold via Telegram encrypted messaging service. Counterfeit certificates with QR codes and vaccine serial numbers were offered for 110-500 euros. According to Italian police, fraudulent online sales halted in July and August (28).

Since October 15, Italy has tightened regulations and made vaccination mandatory for all employees, making it one of the toughest policies in the world. It is noteworthy that this change is still communicated

under the green pass concept. Under the new regulation, employees can be put on unpaid leave (not sacked). If the rules set forth by the decree are ignored both employers and employees will invite a fine of 400-1000 Euros and 600 - 1500 Euros respectively. At the same time, COVID-19 testing has become a paid service and the state will cover its fee only if a person cannot be vaccinated for health reasons (28).

On October 9, 10,000 people protested against the new regulation in Rome. There were also attempts to break into the Prime Minister's office. However, the protests have subsided since then and no legal disputes against the regulation have started so far.

According to the Oxford University study, at 30 days after implementation, daily doses in Italy were around 1,500 doses above the synthetic control group, again confirming a positive relationship between certification and vaccine uptake (32). A strong effect (both in the anticipation of new regulation and afterwards) was revealed for 25–49-year-olds, while older age-groups were less responsive, but also had a longer eligibility period to be vaccinated (32).

From 6 August 2021 (the introduction of a mandatory green pass for the first time) to 15 October (tightening of the regulation) the vaccination coverage increased from 66% to 77% (9).

Recent changes have introduced a "Super Green Pass" with stricter conditions – health workers were required to get a booster dose of vaccine, and education, police and military personnel were given a deadline to undergo mandatory vaccination until December 15 (71).

Israel

Israel is one of the pioneer countries to introduce a mandatory green pass. The regulation was first enforced in February 2021 when the vaccination rate was 43% and was applied to recreational and hospitality services. Green Passes are given to fully vaccinated persons and those who have been recovered from the illness or tested negative for COVID-19 (74).

There was a small protest in Israel over the new regulation as well as some confusion about how the green pass worked as evidenced by varied enforcement from one business to another. However, the number of cases soon plummeted, and the vaccination rate increased significantly, leading to the full opening of the economy and the suspension of the green pass regulation on June 1, 2021. It is unclear to what extent this progress was caused by the Green Pass regulation.

After the surge in school-related COVID-19 cases the Prime Minister urged the citizens to vaccinate their children until the end of June given that doses available by then were to expire on July 9. Soon, healthcare providers reported that appointments for 12-15-year-old vaccinations had tripled. It was likely due to the increased infection rate and official statements on the urgency of vaccination and a tight deadline (32).

In July the incidence of infection increased due to the spread of delta strain and in 29th of July the green pass regulation was reimposed with an extended scope of application (75).

Israel introduced mandatory vaccination in various fields though used a green pass concept for communication purposes. The latter has been extended to cover workers employed in healthcare, social care (shelter, nursing houses, etc.), education, entertainment and recreation. An employee who is not directly in contact with a patient / customer is not required to get a green pass and it is up to an employer to decide on the issue. The fine for violating green pass rules is imposed on the legal entity and amounts to the equivalent of 1,550-3,100 USD.

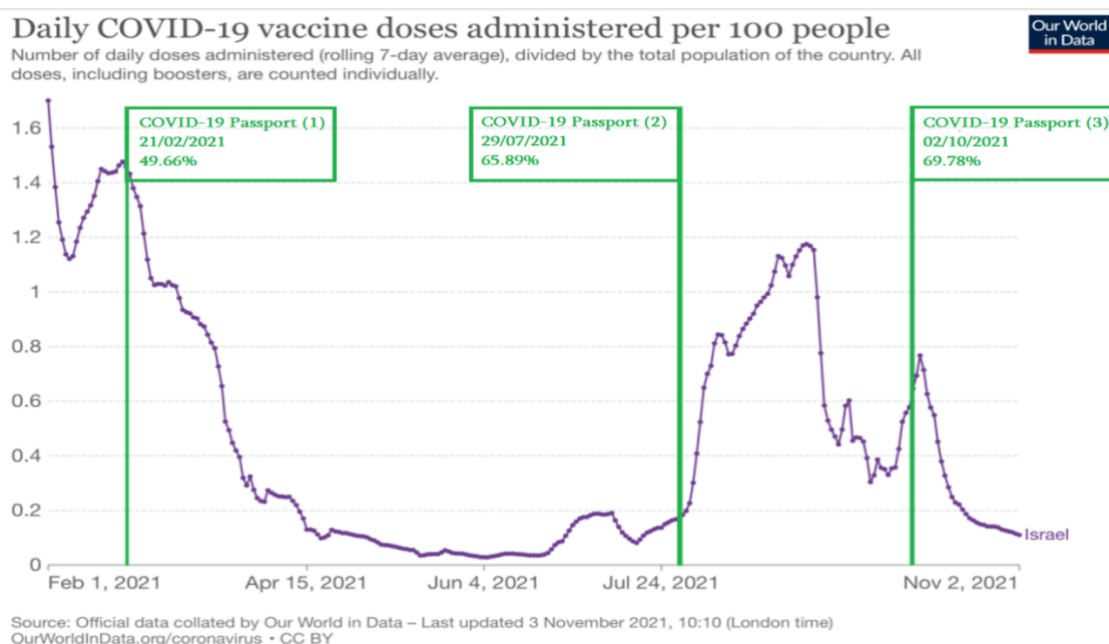
Due to the recurring increase in cases the government of Israel extended a green pass obligation also to children aged 3 and more years. However, since children in this age group are ineligible for vaccination

their tests will be funded by the government to let them enjoy services for which a green pass is mandatory (76).

Figure 2 shows that there was a sharp increase in daily vaccinations directly after the renewal of the regulation and 40 days after its implementation during with the rate reached its maximum. According to the Oxford University study vaccination rates in Israel were still more than 5,000 doses per million inhabitants higher than those in the control group countries (32).

Since October 2021, Israel has further tightened its Green Pass regulation by setting a booster dose as a condition for issuing the pass. This is one of the strictest regulatory approaches in the world (31,42). Figure 2 indicates that the latter had slightly increased the daily rate vaccination rate.

Figure 2. Israel - Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)



- 1) COVID-19 Passport (1) - Entertainment and cultural events, catering facilities, fitness facilities, places of worship;
- 2) COVID-19 Passport (2) – Reinstatement of regulations with an extended scope of application;
- 3) COVID-19 Passport (3) – The third (booster) dose was added.

Canada

Canada officially declared a vaccine mandate on October 6, 2021, when the vaccination rate in the country was quite high (76,88%). This was preceded by the plan announced in August concerning the introduction of the regulation. The ruling concerned federal service workers and passengers of federal air, train, and marine transport. The regulation entered into force three weeks later (October 30). Since then, federal service workers are required to provide a proof of full vaccination and those unvaccinated are placed on unpaid leave. Employees who got the first shot are placed on an unpaid leave or are allowed to work distantly until they get the second shot. Testing of workers is not accepted as an alternative to vaccination.

Before November 30 travelers were allowed to provide a negative antigen test result valid for the last 72 hours as an alternative to the proof of vaccination. Since then, only a vaccination certificate is accepted.

According to the Prime Minister of Canada these regulations are some of the strongest in the world. There are almost 300,000 federal service workers, plus 955,000 federally regulated workers, representing about 8% of Canada's full-time workforce. From November 1st yet another vaccination rule was added requiring

that all visitors of the Senate of Canada be fully vaccinated. This applies to Senate staffers, journalists, and other visitors.

The placement of the federal service workers on unpaid leave has sparked protests and several lawsuits.

As for the implementation of the measure, The Public Service Alliance of Canada expressed its dissatisfaction with the short notice. Yet, the National Airlines Council of Canada endorsed the decision, though also voiced concern about insufficient time for implementation.

COVID-19 vaccine mandate on federal workers will be revisited every 6 months to assess the need for it (14).

Ukraine

Ukraine is one of the countries where the vaccination rate remains low. The introduction of a green pass was announced on 13 September and the regulation came into force on 20 September. By that time, only 12.0% of the entire population had been fully vaccinated. Pursuant to new regulations, if all visitors and at least 80% of staff at the venues are at least partially vaccinated businesses such as cinemas, gyms, theatres, and swimming pools will be allowed to operate without social distancing requirements. Educational institutions can also operate without social distancing if all staff are fully vaccinated (69).

The introduction of a green pass has, to some extent, intensified daily vaccinations. However, it should be noted that Ukraine presents an example of a country where green pass forging has been quite widespread involving both ordinary people and doctors. There are cases when in order to issue a counterfeit green pass fraudulent information about a citizen is entered into the state vaccination registry. This way people who are, in fact, unvaccinated become registered as fully vaccinated. Simultaneously, it is also known that forged green passes can be bought even by foreigners (70).

At the beginning of October this year, coverage was 13.44%. On October 4, the Ministry of Health of Ukraine approved the list of organizations/occupations in which workers are required to be vaccinated against COVID-19:

- central executive bodies and their territorial bodies.
- local state administrations and their structural subdivisions.
- institutions of higher, postgraduate, professional higher, professional (vocational), general secondary, including special, preschool, out-of-school education, institutions of specialized education and scientific institutions, regardless of the type and form of ownership.

According to the Minister of Health of Ukraine, this decision was aimed at protecting the life and health of citizens, creating a safe environment in educational facilities and public institutions.

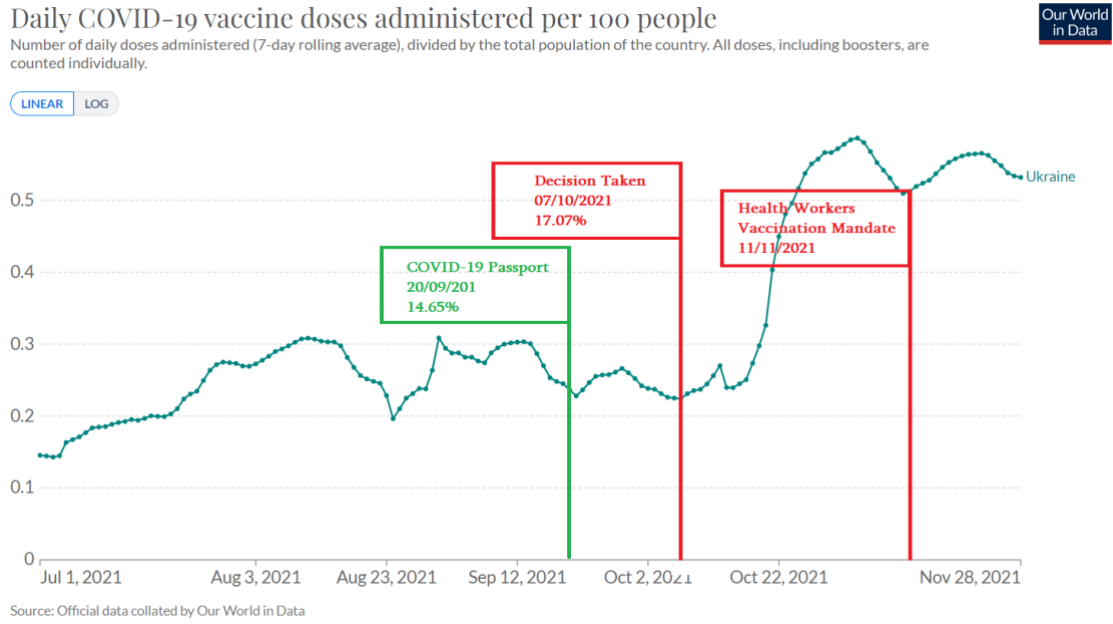
The order came into force in one month from the date of its publication. Employees of educational institutions and executive bodies who fail to get vaccinated against COVID-19 until a set deadline would be suspended from work (23).

Figure 3 below indicates that the daily vaccination rate increased close to the required date of mandatory vaccination.

On November 11, a month later from the announcement (vaccination coverage 19.42%) Ukraine's health ministry proposed expanding the list of occupations for which COVID-19 vaccinations would be compulsory to cover medical personnel and municipal employees. On November 16, Ukrainian President announced

that people would be offered a cash incentive equivalent to 33 Euros to get fully vaccinated. Since that date, daily vaccination rates have obviously increased (23).

Figure 3. Ukraine - Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)



Summary

Mandatory vaccination and green passes are such restrictive or incentivizing measures that are introduced by countries after implementing other interventions when vaccines are readily available.

So far, as little time has passed since countries introduced mandatory vaccinations and green passes and because they are implemented simultaneously with other measures, it is difficult to draw conclusions about a direct cause-and-effect relationship between these interventions and vaccination rates in all reviewed countries. When considering the effects, it is important to take into account country-specific contexts, namely vaccination rate, resistance to vaccination, trust in government, and the trajectory of the epidemic.

Mandatory vaccination, the same as green pass for the employed, targets specific groups for which, considering their profession, benefits from vaccination to them and people around them outweigh risks posed by vaccination.

Such groups include those employed in the health, social, and education sectors who have direct contact with other people who are likely to be high-risk individuals. Mandatory vaccination in selected groups only has little effect on country vaccination rates. The introduction of such regulations amidst high vaccine hesitancy may be associated with strong protests and, potentially, voluntary or involuntary termination of employment of those opposing vaccination.

Raising vaccine confidence in specific groups, sensitizing employers and employees (giving a few months to decide and clear explanations in advance), encouraging, as much as possible, vaccinations at workplaces are important steps to advance this intervention.

Green pass gives vaccinated persons and those of similar status the freedom of movement and assembly and promotes economic, educational and cultural activities.

Prior to the spread of the Omicron strain countries mainly used the 3G approach, which is based on vaccination, testing, and recent recovery from infection for a set period of time. Green pass is mainly applied to the users of "luxury" services, which does not contradict the people's right to health, food and public services.

At this stage none of the countries uses green pass for retail shops, including large malls, although entertainment or catering facilities located in shopping malls are subject to green pass regulation. However, there are quite strict regulations over there. Of the reviewed countries, Canada was the first to restrict the use of federal transportation for unvaccinated persons and, nowadays, Germany and Italy also restrict country entry as well as the use of public transportation without a green pass. Due to the spread of Omicron strain, there are also plans to restrict access to non-essential shops without a green pass.

Businesses are keen to restore their activities under green pass regulations when there are economic incentives (e.g., possibility to resume operation in full capacity) and other favorable conditions (e.g., high vaccination rates, a big number of people recovered from illness). Wide access to vaccines and testing services is important to ensure equality under green pass regulations. Testing services need to be state funded for those who are not vaccinated under national immunization programs or have established medical contraindications to vaccination.

A sharp increase in daily vaccination rates was observed shortly after the announcement of green pass rules in various countries, which is most likely explained by a direct effect of regulations. It should be noted that the increase is more pronounced when the initial vaccine uptake is low rather than high.

The positive impact of a green pass on vaccine uptake is confirmed by the Oxford University study conducted in 6 countries (32). In particular,

- The vaccine uptake goes up upon the announcement on average 20 days prior to implementation of the regulation with a lasting effect up to 40 days after.
- The increase is more pronounced when pre-intervention vaccine uptake is low.
- When regulations cover nightclubs, big events (>1,000 people) vaccine uptake goes up in the age groups of <20 and 20-29 years old.
- When regulations are extended to the entire hospitality sector vaccine uptake increases in the age group of 30-49 years old.

The enforcement of green pass and mandatory vaccination regulations is the responsibility of employers / legal entities, and penalties apply to both individuals and employers / legal entities. On the enforcement side, counterfeiting green passes has been reported in many countries, though it is more prevalent in countries where the security of electronic registries is compromised, corruption is rampant, and adequate administrative controls and enforcement of fines are not in place.

The impact of the green pass on the economy has not been assessed. According to calculations made prior the introduction of regulation in Scotland, the negative impact of green pass regulations on the economy will be less than that of the complete lockdown of facilities or the imposition of large-scale restrictions on citizens due to rise in COVID-19 rates.

The introduction of the mandatory vaccination and green pass is not an effective way to increase the vaccination rate, especially in the elderly and rural population groups characterized with the lowest vaccine uptake. Other targeted interventions need to be considered for these groups.

It is expected that the current green passport regulations in Georgia will have a marginal impact on increasing vaccination rates, mainly in young and middle-aged people living in urban areas. It does not provide a vaccination incentive for individuals who have contracted the infection and have not been vaccinated after 6 months from recovery, thus putting at risk the users of services subject to green pass regulations. To maximize the impact of a green pass on the vaccination rate especially in population groups who refrain from vaccination due to their generally negligent attitude to the infection (33% of population) it is necessary to expand the use of green passes.

Our review shows that many countries have immediately tightened the existing mandatory vaccination and green pass regulations by expanding the sectors and population groups subject to mandatory vaccination, switching from 3G to 2G restrictions, and expanding the use of green passes to include public transport, non-essential shops, and work environments.

Georgia, like other countries in the world, is under the threat of spreading of Omicron strain. While evidence on this variant is yet to accumulate, its higher transmission rate coupled with the unfavorable vaccine uptake in the country further increase the risks of a massive spread of the infection which will stretch healthcare resources, and lead to associated increase in death rates. Considering this, it is important to base restrictive or incentive measures on scientific approaches, best practices, and public health interests.

Recommendations

The green passport regulation in Georgia as adopted by the Coordination Council decision taken on the 8th of November 2021 needs to be revisited:

- One of the conditions for the green status – recovery from the coronavirus infection with no time limits – is inconsistent with current scientific evidence about the duration of natural immunity and goes against main objectives of introducing a green passport - **to promote business and cultural activity without the risk of infection transmission and to promote vaccination**. Infection related risks are further increased with the spread of new Omicron strain in the country. In addition, due to the above-mentioned condition, Georgian green passport is not aligned with the international practice or the requirement of the EU digital COVID-19 certificate. This fact will create additional confusion among the citizens. **Therefore, it is recommended to immediately change this condition to limit the green status validity by 6 months after the recovery from coronavirus infection.**
- Green passport requirements are mandatory for customers / visitors of specific businesses and cultural facilities while they do not apply to people employed there. Therefore, a safe environment is not guaranteed for customers. The introduction of mandatory vaccination for employees can be marketed as the expansion of a green passport as it was done in Israel and Italy. Accordingly, **it is recommended to extend green passes to employees of businesses already covered by this regulation**. It can be considered to extend green pass mandate to employees who are in a direct contact with customers and other staff (being less than two meters apart while working) and, at the beginning, only workers in hospitality sector serving 50 or more customers may be included.
- **Extend green pass regulations to** workers in occupations in which they are at high risk of contracting the disease and of transmitting it to service customers as well as to employees of state bodies and subordinated organizations to demonstrate the government's responsibility during the pandemic.
 - Occupations:
 - Entire healthcare sector
 - Social sector
 - Education sector (employees of all educational establishments, including pre-school facilities)
 - Fields of employment:
 - Employees of government bodies (including local authorities)
 - Public service employees
 - The green pass mandate may be considered for those employees who are in a direct contact with customers and other staff (less than two meters apart while working)
- The extension of green pass requirements to occupational groups should consider the entire territory of the county and come into force within 2-4 months after the public announcement. Arranging for mobile medical teams to ensure on-site vaccination of employees in large institutions during the period given for vaccination.
- If relevant employees fail to get vaccinated by the expiry of the vaccination deadline the employer should place them on a paid leave (if applicable), followed by unpaid leave for a period from 1 month to 1 year (at the discretion of the employer), and then by temporary suspension from employment.
- Green pass exemptions due to medical contraindications must be confirmed by a health certificate (Form №IV-100 / a). If a medical contraindication is established, test costs should be covered by the state funding.

- A legal entity / employer should be held responsible for enforcing the regulation. To this end, it is important to equip the relevant staff with QR readers, and to ensure that a person's identity is checked by means of one's ID card.
- The infringement of regulations should be fined by 10,000 GEL. Other administrative sanctions may also be considered, including the suspension of operations. LEPL Labor Inspection Service along with the Municipal Supervision Service should control the enforcement of regulations and in case of violation and disobedience, the patrol police should also engage. Offenders involved in green pass counterfeiting should be held administratively liable in case of the first offence and criminally liable in case of the recurrence.
- The green passport rules should be revisited according to the accumulated scientific evidence, considering the epidemiological situation and public health priorities.

References

1. Mathieu E, Ritchie H, Ortiz-Ospina E, Roser M, Hasell J, Appel C, et al. A global database of COVID-19 vaccinations. *Nature Human Behaviour* 2021 5:7 [Internet]. 2021 May 10 [cited 2021 Nov 18];5(7):947–53. Available from: <https://www.nature.com/articles/s41562-021-01122-8>
2. covidvax.live - Worldwide [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://covidvax.live/>
3. On approval of the national plan for introduction of COVID-19 vaccine in Georgia | LEPL “Legal Herald of Georgia” [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.matsne.gov.ge/ka/document/view/5084798?publication=1>
4. Robinson E, Jones A, Lesser I, Daly M. International estimates of intended uptake and refusal of COVID-19 vaccines: A rapid systematic review and meta-analysis of large nationally representative samples. *Vaccine* [Internet]. 2021 Apr 8 [cited 2021 Nov 28];39(15):2024. Available from: </pmc/articles/PMC7867398/>
5. World Health Organization. Knowledge, risk perceptions, preventive behaviors, and public trust in current COVID-19 outbreak, 2021.
6. Facilitating COVID-19 vaccination acceptance and uptake in the EU/EEA [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.ecdc.europa.eu/en/publications-data/facilitating-covid-19-vaccination-acceptance-and-uptake>
7. Government of Georgia. Restrictions [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://stopcov.ge/ka/shezgudvebi>
8. COVID-19 RESPONSE – SPRING 2021, UK [Internet]. 2021 [cited 2021 Nov 16]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963491/COVID-19_Response_-_Spring_2021.pdf
9. Our World in Data, Statistical information about Vaccinations [Internet]. 2021 [cited 2021 Oct 24]. Available from: <https://ourworldindata.org/covid-vaccinations>
10. Rights Georgia. Compulsory vaccination does not violate human rights. 2021.
11. Order of the Minister of IDPs from the Occupied Territories of Georgia, Labor, Health and Social Affairs №01-51/Б [Internet]. 2020. Available from: <https://www.matsne.gov.ge/ka/document/view/4869455?publication=0>
12. News - Rights [Internet]. [cited 2021 Nov 25]. Available from: <https://rights.ge/ka/new/102>
13. Mandatory vaccination for two workforces | Beehive.govt.nz [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.beehive.govt.nz/release/mandatory-vaccination-two-workforces>
14. МОЗ затвердило перелік професій, для яких щеплення проти COVID-19 є обов’язковим [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://moz.gov.ua/article/news/moz-zatverdilo-perelik-profesij-dlja-jakih-sheplennja-proti-covid-19-e-obov%e2%80%99jazkovim>
15. Canada imposes COVID-19 vaccine mandate on federal workers, transportation | Reuters [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.reuters.com/world/americas/unvaccinated-federal-workers-canada-will-be-put-unpaid-leave-globe-mail-2021-10-06/>

16. Saudi Arabia: Mandatory Vaccination to Attend the Workplace - Global Compliance News [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.globalcompliancencnews.com/2021/09/02/saudi-arabia-mandatory-vaccination-to-attend-the-workplace-16082021/>
17. COVID vaccination to become virtually compulsory in Azerbaijan | Eurasianet [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://eurasianet.org/covid-vaccination-to-become-virtually-compulsory-in-azerbaijan>
18. Costa Rica mandates COVID-19 vaccination for all state workers | Reuters [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.reuters.com/world/americas/costa-rica-mandates-covid-19-vaccination-all-state-workers-2021-09-28/>
19. Information for industry and workers required to be vaccinated | Coronavirus Victoria [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.coronavirus.vic.gov.au/information-workers-required-to-be-vaccinated>
20. Frati P, la Russa R, di Fazio N, del Fante Z, Delogu G, Fineschi V. Compulsory Vaccination for Healthcare Workers in Italy for the Prevention of SARS-CoV-2 Infection. *Vaccines* 2021, Vol 9, Page 966 [Internet]. 2021 Aug 29 [cited 2021 Nov 16];9(9):966. Available from: <https://www.mdpi.com/2076-393X/9/9/966/htm>
21. Giannouchos T v., Steletou E, Saridi M, Souliotis K. Mandatory vaccination support and intentions to get vaccinated for COVID-19: Results from a nationally representative general population survey in October 2020 in Greece. *Journal of evaluation in clinical practice* [Internet]. 2021 Aug 1 [cited 2021 Nov 16];27(4):996–1003. Available from: <https://pubmed.ncbi.nlm.nih.gov/34060686/>
22. Covid jabs to be compulsory for NHS staff in England from April | NHS | The Guardian [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.theguardian.com/society/2021/nov/03/covid-jabs-to-be-compulsory-for-nhs-staff-in-england-from-april>
23. COVID in Europe: Germany targets unvaccinated as Austria extends lockdown | Euronews [Internet]. [cited 2021 Dec 3]. Available from: <https://www.euronews.com/2021/12/03/covid-19-spike-felt-across-europe-as-vaccination-remains-stagnant>
24. Mandatory Employee Vaccines – Coming to A State Near You? | Littler Mendelson P.C. [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.littler.com/publication-press/publication/mandatory-employee-vaccines-coming-state-near-you>
25. Kazakhstan to begin mandatory vaccination of work staff on July 2 [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://interfax.com/newsroom/top-stories/72165/>
26. Greece orders COVID-19 vaccinations as infections rise | Reuters [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.reuters.com/world/europe/greece-rolls-out-covid-19-vaccinations-those-aged-15-17-2021-07-12/>
27. Italy makes COVID-19 vaccine mandatory for all health workers | Reuters [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.reuters.com/article/us-health-coronavirus-italy-vaccine-idUSKBN2BN34F>
28. Increase Vaccine uptake in Georgia, Recommendations & Lessons Learned from Global COVID-19 Vaccine Implementation, Presentation by World Bank Group. 2021.

29. Obligatory Covid vaccines for all in France? Senators demand change [Internet]. [cited 2021 Dec 3]. Available from: <https://www.connexionfrance.com/French-news/Obligatory-Covid-vaccines-for-all-in-France-Senators-demand-change>
30. Coronavirus (COVID-19): vaccine certification scheme - information for customers [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.gov.scot/publications/coronavirus-covid-19-vaccine-certification-scheme-information-for-customers/>
31. Israel requires COVID-19 booster shots for stricter green pass [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.reuters.com/world/middle-east/israel-requires-covid-19-booster-shots-stricter-green-pass-2021-10-03/>
32. Mills MC, Rüttenauer T. The impact of mandatory COVID-19 certificates on vaccine uptake: Synthetic Control Modelling of Six Countries [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.medrxiv.org/content/10.1101/2021.10.08.21264718v1.full-text>
33. Vaccinations: protection for everyone [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.bundesregierung.de/breg-en/news/federal-regional-consultation-coronavirus-1949666>
34. How Austria's COVID-19 "Entry Tests" Work [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.austria.info/en/service-and-facts/coronavirus-information/tests>
35. Where France's Covid-19 'health pass' is now mandatory [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.france24.com/en/france/20210802-france-s-covid-19-health-pass-where-it-is-mandatory-and-what-will-change-on-august-9>
36. Chinese cities announce vaccine requirements for public places, setting off debate about freedom and vaccination inequality [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://supchina.com/2021/07/13/chinese-cities-announce-vaccine-requirements-for-public-places-setting-off-debate-about-freedom-and-vaccination-inequality/>
37. Azerbaijan COVID certificates for public spaces [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.covidpasscertificate.com/azerbaijan-covid-certificate/>
38. Israel to reinstate Covid-19 green pass vaccine certificates as Delta variant hits [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.nbcnews.com/news/world/israel-reinstate-covid-19-green-pass-vaccine-certificates-delta-variant-n1274746>
39. Hawaii students face a vaccine mandate or weekly testing [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.staradvertiser.com/2021/08/18/hawaii-news/hawaii-students-face-a-vaccine-mandate-or-weekly-testing/>
40. COVID-19 green certification, EU digital COVID certificate [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.dgc.gov.it/web/>
41. COVID Pass: guidance for businesses and events [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://gov.wales/covid-pass-guidance-businesses-and-events-html>
42. Israel: the Ramzor Green Pass and booster shots [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.covidpasscertificate.com/israelis-can-obtain-covid-green-pass/>
43. Italy makes Green Pass mandatory for indoor restaurants, changes pandemic parameters [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.globaltimes.cn/page/202107/1229463.shtml?id=11>

44. New Orleans to require COVID vaccines or negative tests for bars, Superdome, other venues [Internet]. 2021 [cited 2021 Oct 28]. Available from: https://www.nola.com/news/coronavirus/article_20a8445c-fb7b-11eb-bbf1-1fa3b35d5990.html
45. California Will Require Proof of Vaccine or Negative COVID Test for Indoor Mega Events [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.nbclosangeles.com/news/coronavirus/california-require-proof-of-vaccination-covid-19-coronavirus-vaccine-indoor-mega-events-masks/>
46. The “Ashyq” application [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://egov.kz/cms/en/articles/prilozhenie-ashyq>
47. COVID-19 ‘VAX PASS’ MAY BE NEEDED TO SEE CHICAGO SUMMER CONCERTS, EVENTS [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.illinoispolicy.org/covid-19-vax-pass-may-be-needed-to-see-chicago-summer-concerts-events/>
48. What you need to know about New York City’s new vaccine proof [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.technologyreview.com/2021/08/04/1030520/what-you-need-to-know-about-new-york-citys-new-vaccine-proof/>
49. Incentivizing Vaccination Uptake, The green pass Proposal in Israel [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://jamanetwork.com/journals/jama/fullarticle/2777686>
50. COVID passports in Brazil’s major cities [Internet]. 2021 [cited 2021 Oct 28]. Available from: <https://www.covidpasscertificate.com/brazil-covid-certificate/>
51. Coronavirus (COVID-19) vaccine certification: evidence paper, Scottish Government [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.gov.scot/publications/covid-vaccine-certification-evidence-paper/pages/5/>
52. Porat T, Burnell R, Calvo RA, Ford E, Paudyal P, Baxter WL, et al. “Vaccine Passports” May Backfire: Findings from a Cross-Sectional Study in the UK and Israel on Willingness to Get Vaccinated against COVID-19 [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.mdpi.com/2076-393X/9/8/902>
53. Switzerland Makes COVID-19 Passport Mandatory for Accessing Restaurants & Other Indoor Spaces, Including for Tourists [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.schengenvisa.info.com/news/switzerland-makes-covid-19-passport-mandatory-for-accessing-restaurants-other-indoor-spaces-including-for-tourists/>
54. Scotland Covid passports and how they will be enforced - Everything you need to know [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.dailyrecord.co.uk/lifestyle/scotland-covid-passports-how-enforced-25199005>
55. Ukraine’s black market in COVID vaccine certificates [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://abcnews.go.com/International/ukraines-black-market-covid-vaccine-certificates/story?id=80722257>
56. Kazakhstan: Black market in fake coronavirus passports booms [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://eurasianet.org/kazakhstan-black-market-in-fake-coronavirus-passports-booms>
57. Italy imposes mandatory COVID health pass for work amid protests [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.reuters.com/world/europe/italys-mandatory-covid-health-pass-work-sees-untroubled-launch-2021-10-15/>

58. How France tackled vaccine hesitancy [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.economist.com/europe/2021/09/18/how-france-tackled-vaccine-hesitancy>
59. Analysis: With boosters, masks and Green Pass, Israel sees a COVID-19 wave in retreat [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.reuters.com/world/middle-east/with-boosters-masks-green-pass-israel-sees-covid-19-wave-retreat-2021-10-15/>
60. Green Pass: How to get Italy's digital covid cert and how it works [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.wantedinrome.com/news/green-pass-how-to-get-italys-digital-covid-cert-and-how-it-works.html>
61. France ends free testing for COVID-19 [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.aa.com.tr/en/world/france-ends-free-testing-for-covid-19/2393545#>
62. Covid deaths soar in Ukraine as the country struggles with fake vaccine certificates. [Internet]. 2021 [cited 2021 Oct 24]. Available from: <https://www.nytimes.com/2021/10/19/world/europe/ukraine-covid-deaths.html>
63. Coronapas: The passport helping Denmark open up after Covid [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.bbc.com/news/world-europe-56812293>
64. Chinese cities announce vaccine requirements for public places, setting off debate about freedom and vaccination inequality [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://supchina.com/2021/07/13/chinese-cities-announce-vaccine-requirements-for-public-places-setting-off-debate-about-freedom-and-vaccination-inequality/>
65. Kazakhstan rolls out app to control access to public areas [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.reuters.com/world/middle-east/kazakhstan-rolls-out-app-control-access-public-areas-2021-05-20/>
66. Kazakhstan: Vaccine app offers hope of reopening, but there are hiccups [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://eurasianet.org/kazakhstan-vaccine-app-offers-hope-of-reopening-but-there-are-hiccups>
67. Covid in Scotland: Hundreds refused entry in vaccine passport "chaos" [Internet]. 2021 [cited 2021 Nov 16]. Available from: <https://www.bbc.com/news/uk-scotland-59034619>
68. EU COVID Certificate: the global vaccine passport [Internet]. [cited 2021 Nov 30]. Available from: <https://www.covidpasscertificate.com/europe-digital-green-pass/>
69. Bloomberg.com [Internet]. [cited 2021 Dec 3]. Available from: <https://www.bloomberg.com/europe>
70. Omicron: What are the new Covid rules for travelling to the UK? - BBC News [Internet]. [cited 2021 Dec 3]. Available from: <https://www.bbc.com/news/explainers-52544307>
71. Italy to tighten Covid rules for unvaccinated with 'super green pass' | Italy | The Guardian [Internet]. [cited 2021 Dec 3]. Available from: <https://www.theguardian.com/world/2021/nov/24/italy-poised-to-tighten-rules-for-unvaccinated-with-super-green-pass>
72. COVID in Europe: Germany targets unvaccinated as Austria extends lockdown | Euronews [Internet]. [cited 2021 Dec 3]. Available from: <https://www.euronews.com/2021/12/01/covid-19-spike-felt-across-europe-as-vaccination-remains-stagnant>

73. Coronavirus: the situation in Switzerland - SWI swissinfo.ch [Internet]. [cited 2021 Dec 3]. Available from: https://www.swissinfo.ch/eng/covid-19_coronavirus--the-situation-in-switzerland/45592192
74. Israel eases restrictions following vaccine success [Internet]. 2021 [cited 2021 Nov 17]. Available from: <https://www.bbc.com/news/world-middle-east-56143126>
75. Covid Passports by Institute for Government, UK [Internet]. 2021 [cited 2021 Nov 17]. Available from: <https://www.instituteforgovernment.org.uk/explainers/vaccine-passports>
76. Israel extends Covid restrictions to three-year-olds as cases surge [Internet]. 2021 [cited 2021 Nov 17]. Available from: <https://www.bbc.com/news/world-middle-east-58245285>
77. Ukrainian government announces vaccine passports | Reuters [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://www.reuters.com/world/europe/ukrainian-government-announces-vaccine-passports-2021-09-13/>
78. Ukraine's black market in COVID vaccine certificates - ABC News [Internet]. 2021 [cited 2021 Nov 25]. Available from: <https://abcnews.go.com/International/ukraines-black-market-covid-vaccine-certificates/story?id=80722257>

Annexes

Tables: Examples of Mandatory Vaccination

Country	Groups Covered	Intervention	Announcement Date	Enforcement Date	Coverage with Dose 1 before the intervention (whole population)
New Zealand	Healthcare staff	Phased mandatory vaccination	11/10/2021	1 st dose – 30/10/2021 2 nd dose – 01/12/ 2021	71.28%
	Employees in the education facilities		11/10/2021	1 st dose – 15/11/2021 2 nd dose – 01/01/2022	
	Employees in the corrections sector		11/10/2021	1 st dose – 06/11/2021 2 nd dose – 08/12/2021	
Canada	Public sector employees	Mandatory vaccination with two doses by the set deadline, otherwise unpaid leave	06 /10/2021	29 /12/2021	76.88%
	Employees in air, rail, and marine transportation, and respective travelers	Mandatory vaccination with two doses; obligatory for travelers and employees	06/10/2021	30/10/2021	
	Members and visitors of the Canadian Senate	No unvaccinated senators, staffers, visitors, journalists, etc. are permitted to the Senate of Canada.	01/11/2021	1/11/2021	
Italy	Healthcare personnel (providers of health and social care services)	Mandatory, in case of refusal – transfer to another position (where there is lower risk of the disease spread) or temporary suspension from work up to 1 year	31/03/2021	1/04/2021	5.41%
		Booster dose	02/12/2021		
	Education, police, military		02/12/2021	15/12/2021	

Country	Groups Covered	Intervention	Announcement Date	Enforcement Date	Coverage with Dose 1 before the intervention (whole population)
France	Healthcare workers (hospital staff, ambulance workers, retirement home workers) - 2.7 mln people	Mandatory vaccination with at least one shot by the set deadline	07/2021	15/09/2021	54.98% (15.07.21)
Saudi Arabia	All public and private sector workers	The intervention envisages a phased termination of the contract while providing time for vaccination: first, employees are transferred to remote work, next – they are given a paid leave, then – they are placed on unpaid leave for 20 days and finally – their contracts are terminated (upon expiry of the deadline)	18/052021	01/10/2021	53.70%
USA	Selected groups of employees	Mandatory vaccination for selected groups of workers in some states and municipalities; in case of refusal, the policy provides for a weekly COVID-19 testing and/or an obligation to wear a mask.	x	x	x
New York, USA	Health care workers (hospital and nursing home employees)	Vaccination has become mandatory for all healthcare workers in New York State.	08/2021	27/09/2021	% of vaccinated staff before the intervention: healthcare staff - 84% caregivers - 81%, long-term care staff - 77%
	Public school employees	Mandatory for all public-school employees providing for a weekly COVID-19 testing if a person is not vaccinated	08/2021	04/10/2021	87% of all employees, 91% of teachers and 97% of directors were inoculated before the intervention took effect

Country	Groups Covered	Intervention	Announcement Date	Enforcement Date	Coverage with Dose 1 before the intervention (whole population)
Rhode Island, USA	Health workers employed in all licensed public or private healthcare facilities – hospitals and assisting living facilities	Full mandatory vaccination and, if not vaccinated, wearing a mask and testing for COVID-19 at least two times per week	10/08/2021	01/10/2021	x
Washington, USA	Mandatory vaccination for government employees, contractors and volunteers	Mandatory vaccination to be admitted to a workplace	09/08/2021	18/10/2021	68,53% (at the time of announcement of the measure)
Kazakhstan	Workers employed in service industry (bank, financial, insurance, hotels), retail and wholesale stores, transport, airport, communication and telecommunication facilities	Phased mandatory vaccination allowing for a weekly COVID-19 testing if an employee is not vaccinated. At the same time, it is required that only 20% of employees work onsite and 80% - remotely (in the cities of Almaty and Nur-Sultan, which are now in the “red” zone). Unvaccinated employees can work onsite if the above percentage requirement is met.	02/07/2021	1 st dose – 15/07/2021 2 nd dose – 15/08/2021	18.44%
Azerbaijan	Public employees, healthcare personnel, service sector workers, etc.	Phased mandatory vaccination	26/07/2021	1 st dose – 01/09/2021 2 nd dose – 01/10/2021	25.96%
Greece	Healthcare personnel	Phased mandatory vaccination providing for temporary suspension from work if not vaccinated by the set dates	12//07/2021	01/09/2021	50.81% As of August 10% of healthcare workers were not vaccinated
	Long-term care facility workers			12//07/2021 (immediately upon announcement)	
	<i>In response to omicron:</i>		30/11/2021	16/01/2022	83%
	People over 60 years of age				

Country	Groups Covered	Intervention	Announcement Date	Enforcement Date	Coverage with Dose 1 before the intervention (whole population)
					People over 60 years of age are not included
Ukraine	Employees of state institutions and all education establishments (public or private)	Full mandatory vaccination providing for temporary suspension from work if not vaccinated by the set dates	07/10/ 2021	07/11/2021	17.07%
	Planned: healthcare workers				
	Public employees and social workers	Subject to dismissal if not vaccinated		09/12/2021	
Great Britain	Long-term care facility workers	Full mandatory vaccination of long-term care facility workers providing for dismissal if not vaccinated	x	11/11/2021	90% are vaccinated (as of November)
	Healthcare workers (1.45 mln people)	Full mandatory vaccination of healthcare workers providing for dismissal if not vaccinated	11/ 2021	04/ 2022	90% of healthcare workers are vaccinated (as of November)
Costa Rica	Employees of state institutions (300 thousand people)	Mandatory vaccination for public sector employees; if not vaccinated, sanctions are decided by an employer in accordance with the national legislation and its internal regulations	28/09/2021	15/10/2021	42.88%
Australia (State of Victoria)	All workers in the State of Victoria, including those employed in healthcare, education, construction and services, as well as sports, media, transportation, judiciary (judges and lawyers)	Phased mandatory vaccination; applies to all employees who want to work on-site (not remotely), provides for a fine of 100,000 USD imposed on employers so far as it is up to them to decide on the mechanisms and strategy for enforcing the mandate within their organizations.	01/10/2021	1 st dose – 15/10/2021 2 nd dose – 26/11/2021	91.6% (as of October 26)

Tables: Examples of Green Passes

Country	Intervention: Green Pass	Scope of Application	Negative Effects	Announcement Date	Enforcement Date	Coverage with one dose at the time of announcement (whole population)
Wales	2G: Vaccination with two doses Negative COVID-19 test result	Night clubs, indoor venues with more than 500 people, outdoor venues with more than 4,000 people, any other event with more than 10,000 people	Emergence of fraudulent green passes	17/09/2021	11/10/2021	86%
Scotland	Vaccination with two doses + 14 days	Late night venues with alcohol and music, indoor venues with more than 500 people, outdoor venues with more than 4,000 people, any other event with more than 10,000 people	Commotion due to long queues at facilities, staff abuse, at the initial stage some of the facilities had to close ahead of the set time.	28/09/ 2021	18/10/2021	91.9%
Israel	3G: Vaccination with two doses Negative COVID-19 test result Positive serology test result Recovery from COVID-19 (for 6 months) From 02/10/2021 Booster shot only	Customers: entertainment and cultural events, catering facilities, fitness facilities, places of worship. Employees in the health, social, entertainment and recreation sectors who have direct contact with the patient / client. Fine from 1,550 to 3,100 USD for a legal entity	Protests, appeals to the Supreme Court.	15/02/ 2021	21/02/2021	43.06%
Italy	3G: Vaccination with one or two doses Negative COVID-19 PCR (72 hrs.) or antigen test result (48 hrs.); Recovery from COVID-19 (for 6 months)	Concerts, sports events, museums, swimming pools, fitness facilities, all public and private sector workplaces, transport, educational facilities, etc. customers and employees (from October 15)	Protests, blockades and public unrest; At the initial stage, registrations for the first dose went down and the rate of rapid antigen testing increased.	22/07/2021	06/08/2021	61.59%
	In response to omicron: Super green pass (similar to 2G)	Indoor catering facilities, night bars, sports halls, museums, swimming pools, gym				

	Basic green pass (similar to 3G)	Transport, employees				
France	3G: Vaccination with two doses Negative COVID-19 test result (72 hrs.) Recovery from COVID-19 (for 12 weeks)	Entertainment and cultural events, catering facilities, healthcare and long- term care facilities, intercity transport, etc.	Protests, marches in 150 cities involving hundreds of thousands of people.	12/07/2021	21/07/2021	53.8%
	Booster dose for people above 65 years of age	As described above			15/12/2021	
Germany	3G: Vaccination with two doses Negative COVID-19 PCR (72 hrs.) or antigen (48hrs.) test result; Recovery from COVID-19 (for 6 months)	Catering and entertainment facilities, hotels, beauty parlors, long-term care facilities.		03/08/2021	23/08/2021	61.81%
	<i>In response to omicron:</i> 3G:	Public transport; Workplaces			19/11/2021 and more stricter rules from	
	2G: Vaccination with two doses or Recovery from COVID-19 (for 6 months)	Catering and entertainment facilities, hotels, beauty parlors, non-essential shops			02/12/2021	
	2G+: Vaccination with two doses or Recovery from COVID-19 (for 6 months) and negative COVID-19 test result	Places with a high risk of infection				
Switzerland	3G: Vaccination with one or two doses Negative COVID-19 PCR or antigen test result (48 hrs.); Recovery from COVID-19 (for 6 months)	Entertainment and cultural events, catering facilities, indoor events.		19/05/2021	07/07/2021	30.08%
Denmark	Vaccination with two doses; Negative COVID-19 PCR or antigen test result (72 hrs.);	Beauty parlors, outdoor and indoor events, all other events	Petition against the new regulation with the signatures of tens of thousands of people.	04/02/2021	06/04/2021	3.10%

	Recovery from COVID-19 (for 180 days)				
Austria	Vaccination with two doses + 22 days; Negative COVID-19 PCR (72 hrs.) or antigen (24 hrs.) test result; Recovery from COVID-19 (for 180 days)	Catering and entertainment facilities, hotels, outdoor and indoor events.		05/06/2021	43.60% (Upon entry into force)
Azerbaijan	Vaccination with two doses Recovery from COVID-19 (6 months)	Restaurants, shopping malls, sports events, cinemas, weddings.	A sharp rise in the number of counterfeit green passes	01/09/2021	40.88%
Kazakhstan	Vaccination with two doses Recovery from COVID-19	Entertainment and cultural events, catering facilities, public spaces of government offices.	Dissatisfaction with long queues; loss of customers; high usage of fake green passes by both customers and service providers; entering fraudulent data in the national immunization registry	01/07/2021	17.97%
Ukraine	Vaccination with one or two doses Negative COVID-19 test result from last 72 hrs. Recovery from COVID-19	Cinemas, theaters, fitness facilities, swimming pools.	Emergence of fake green passes; fake vaccination certificates are readily available to both locals and foreigners	20/09/2021	14.7%
New York, USA	Vaccination with one or two doses	Bars, restaurants, fitness facilities.		13/09/2021	70.8%
California, USA	Vaccination with two doses or a negative COVID-19 test result from last 72 hrs.	Indoor events with more than 10,000 people		23/09/2021	65.3%
Louisiana, USA	Vaccination with two doses Negative COVID-19 test result	Catering facilities sports events, casinos, gyms, outdoor events with more than 500 People		23/08/2021	45.3%
Hawaii, USA	Vaccination with two doses Negative COVID-19 test result (1 week)	Universities if students decide to attend lectures on-site		01/09/ 2021	64.7%

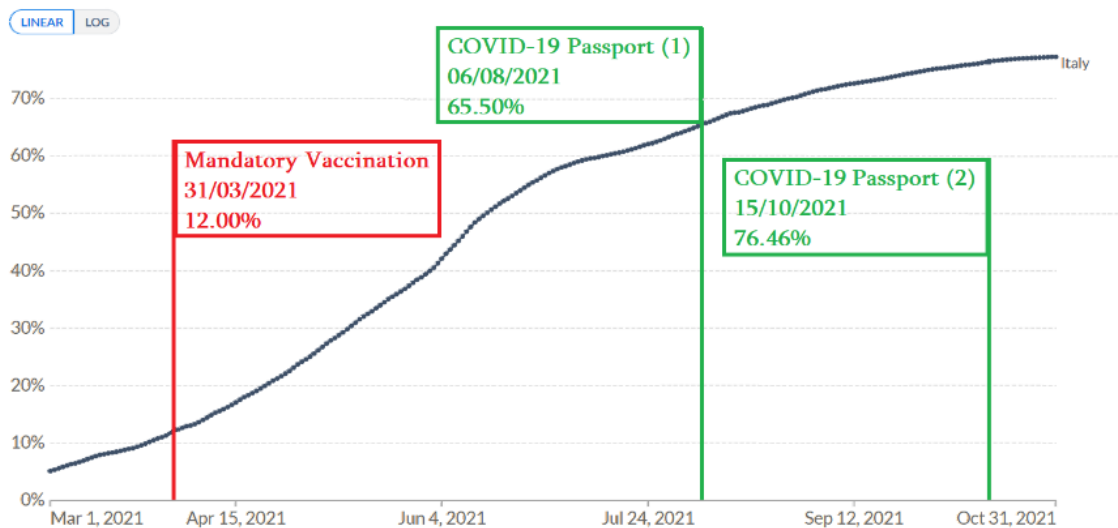
Figures

Figure 4. Italy – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.

Our World
in Data



Source: Official data collated by Our World in Data

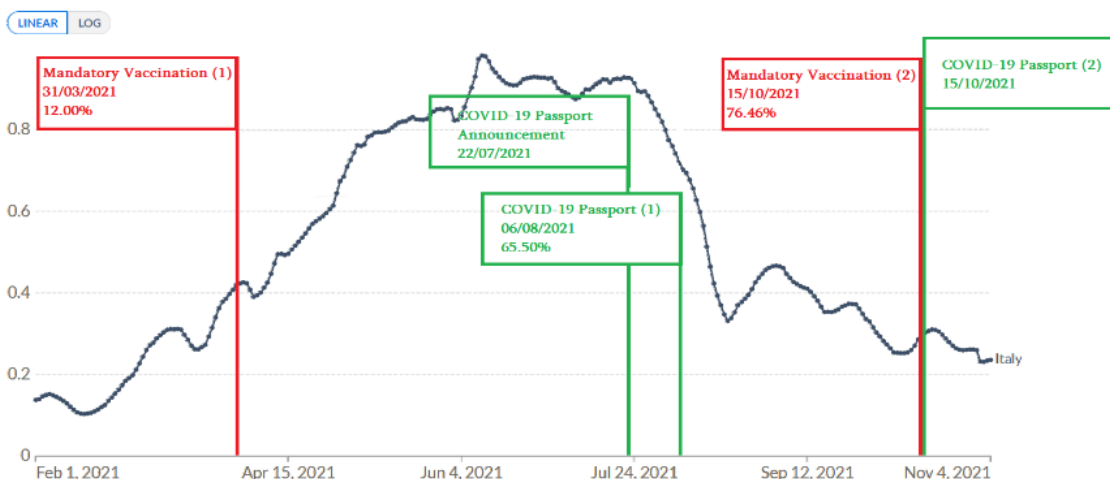
- Mandatory vaccination – Health care personnel
- Green pass (the same as COVID-19 passport) (1) – Concerts, sports events, museums, pools, fitness facilities and others
- COVID-19 passport (2) – All public and private sector workplaces, transport, educational facilities and others

Figure 5. Italy - Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)

Daily COVID-19 vaccine doses administered per 100 people

Number of daily doses administered (7 day rolling average), divided by the total population of the country. All doses, including boosters, are counted individually.

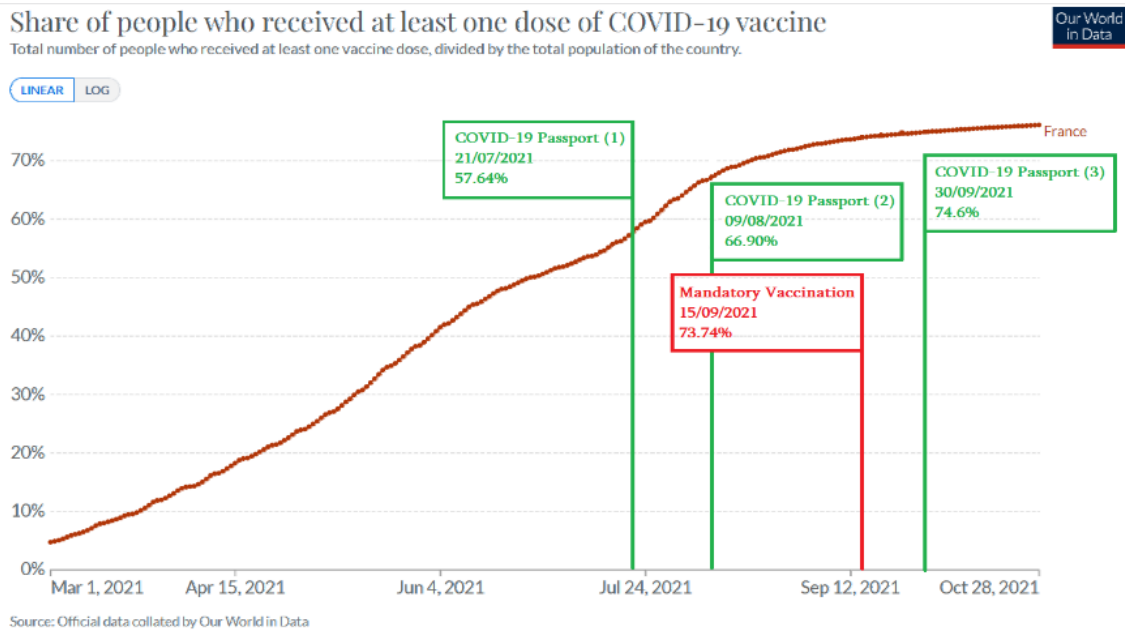
Our World
in Data



Source: Official data collated by Our World in Data

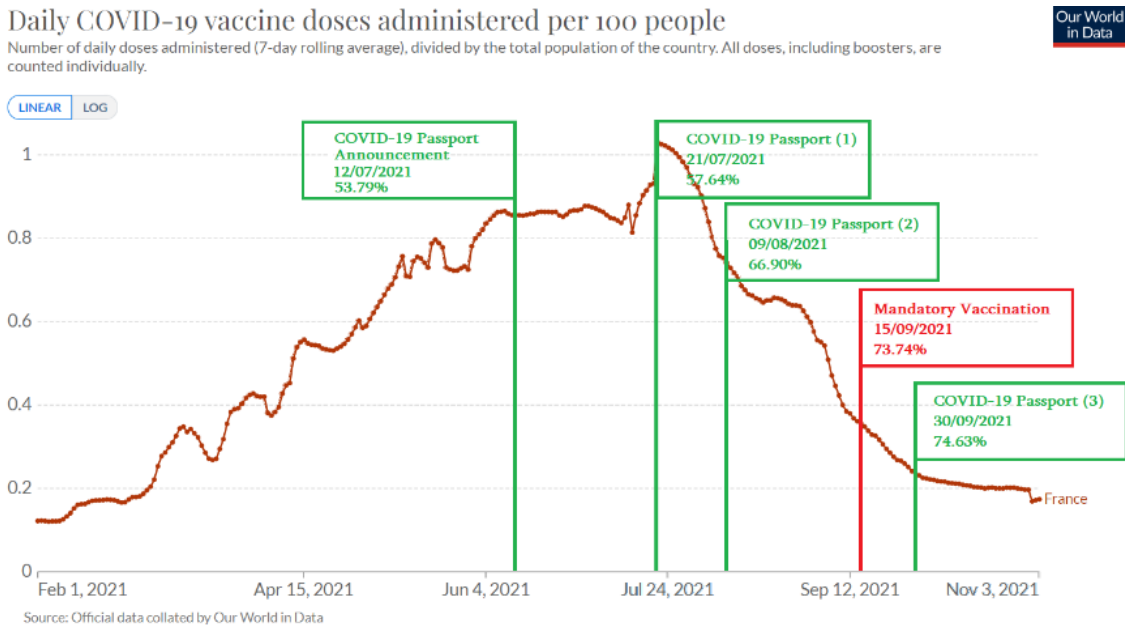
- Mandatory vaccination – Health care personnel
- Green pass (the same as COVID-19 passport) (1) – Concerts, sports events, museums, pools, fitness facilities and others
- COVID-19 passport (2) – All public and private sector workplaces, transport, educational facilities and others

Figure 6. France – Share of people receiving at least one dose of COVID-19 vaccine



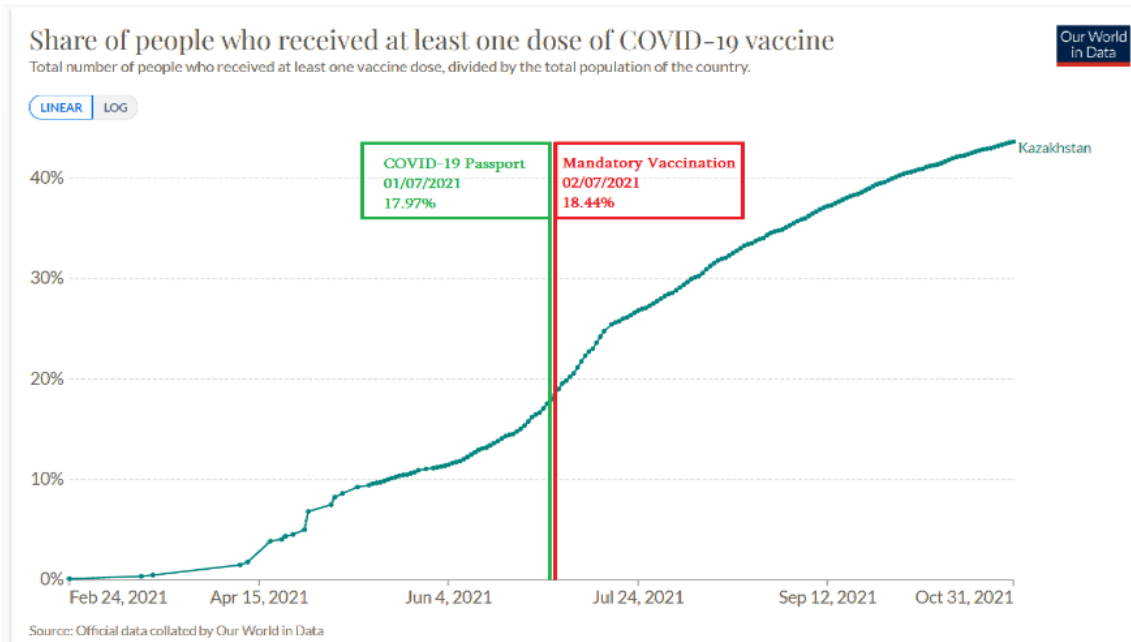
- Mandatory vaccination - Healthcare workers
- COVID-19 passport 1) - Entertainment and cultural events, catering facilities, etc.
- COVID-19 passport 2) - Healthcare and long-term care facilities, intercity transport, etc.
- COVID-19 passport 3) – Adolescents from 12 years of age

Figure 7. France – Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)



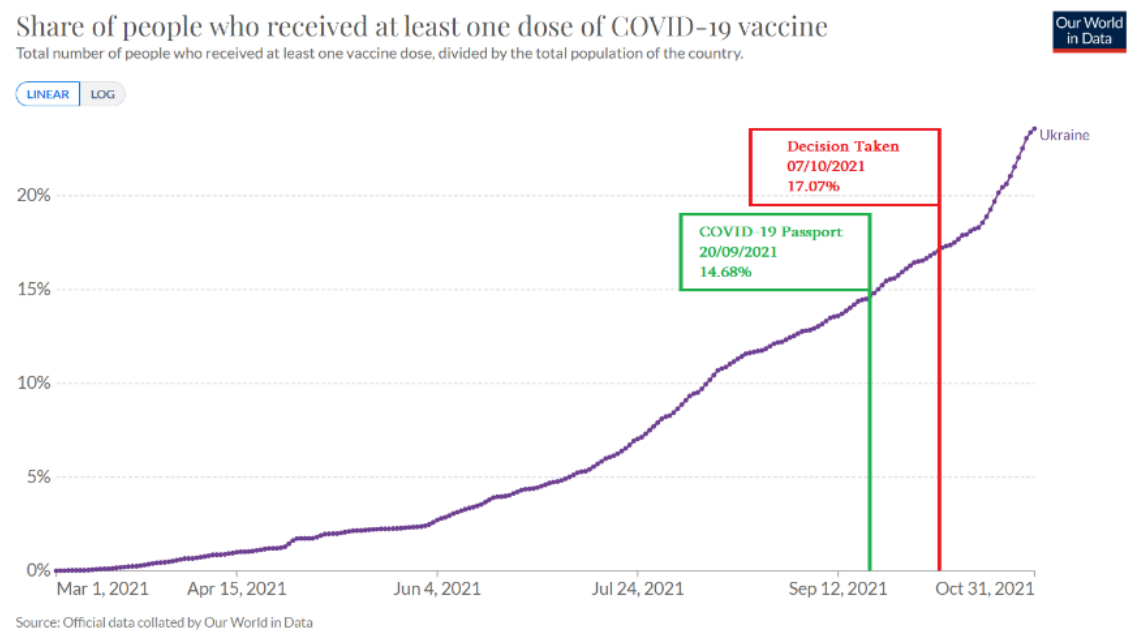
- Mandatory vaccination - healthcare workers
- COVID-19 passport 1) - Entertainment and cultural events, catering facilities, etc.
- COVID-19 passport 2) - Healthcare and long-term care facilities, intercity transport, etc.
- COVID-19 passport 3) – Adolescents from 12 years of age

Figure 8. Kazakhstan – Share of people receiving at least one dose of COVID-19 vaccine



- Mandatory vaccination – Majority of workers (service sector, transportation, etc.)
- COVID-19 passport - Entertainment and cultural events, catering facilities, public spaces of government offices

Figure 94. Ukraine – Share of people receiving at least one dose of COVID-19 vaccine

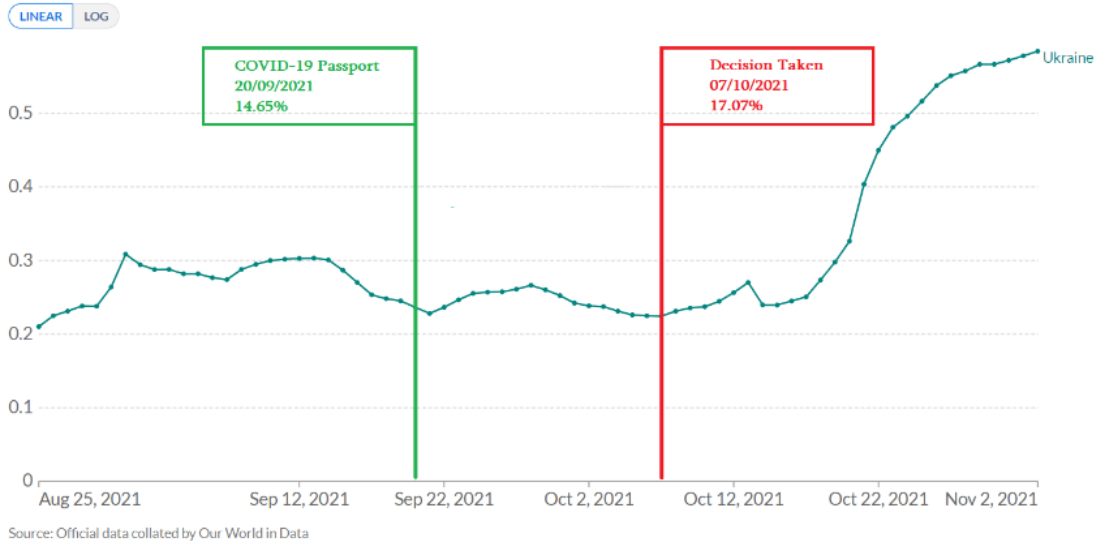


- Mandatory vaccination - Employees of state institutions and all education establishments
- COVID-19 passport - Cinemas, theaters, fitness facilities, swimming pools.

Figure 10. Ukraine – Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)

Daily COVID-19 vaccine doses administered per 100 people

Number of daily doses administered (7-day rolling average), divided by the total population of the country. All doses, including boosters, are counted individually.

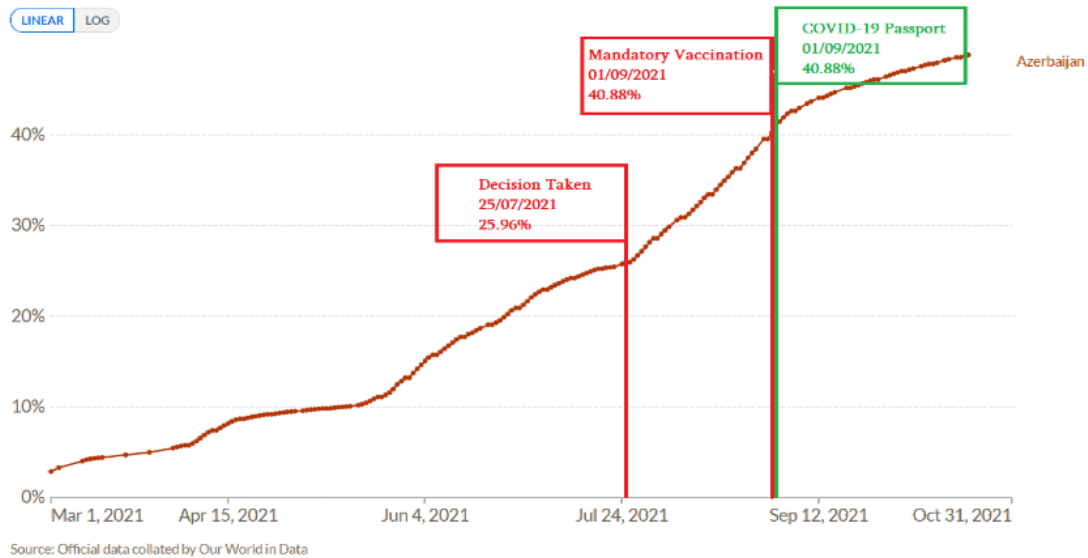


- Mandatory vaccination - Employees of state institutions and all education establishments
- COVID-19 passport - Cinemas, theaters, fitness facilities, swimming pools.

Figure 11. Azerbaijan – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.

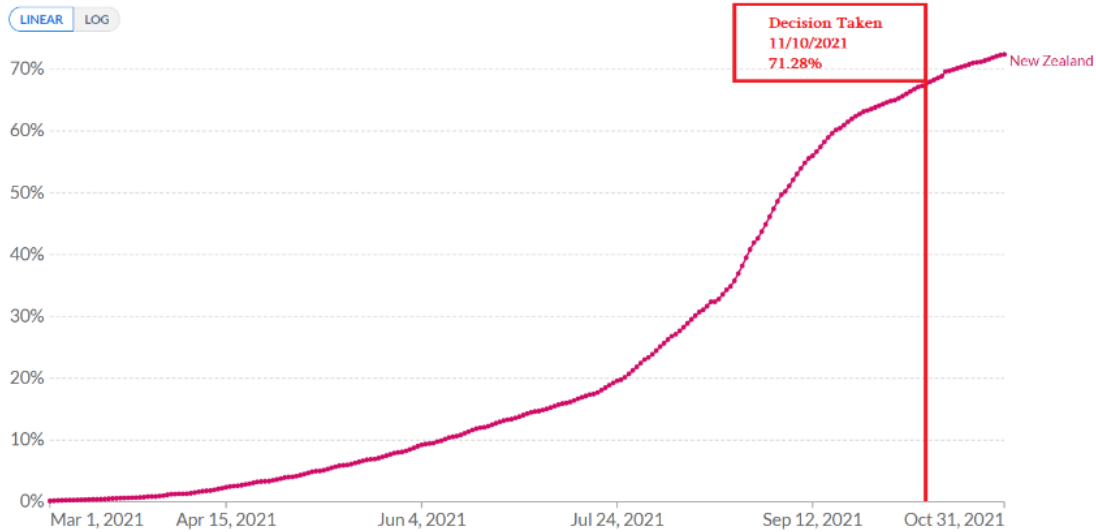


- Mandatory vaccination - Public employees, healthcare personnel, service sector workers, etc.
- COVID-19 passport - Restaurants, shopping malls, sports events, cinemas, weddings.

Figure 12. New Zealand – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.



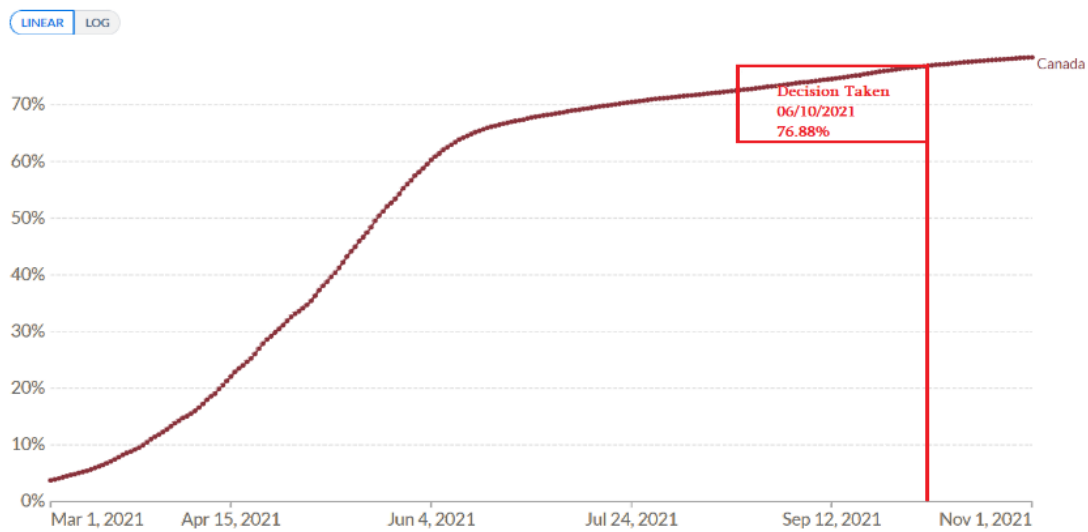
Source: Official data collated by Our World in Data

- Mandatory vaccination - Workers employed in education and healthcare facilities

Figure 13. Canada – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.



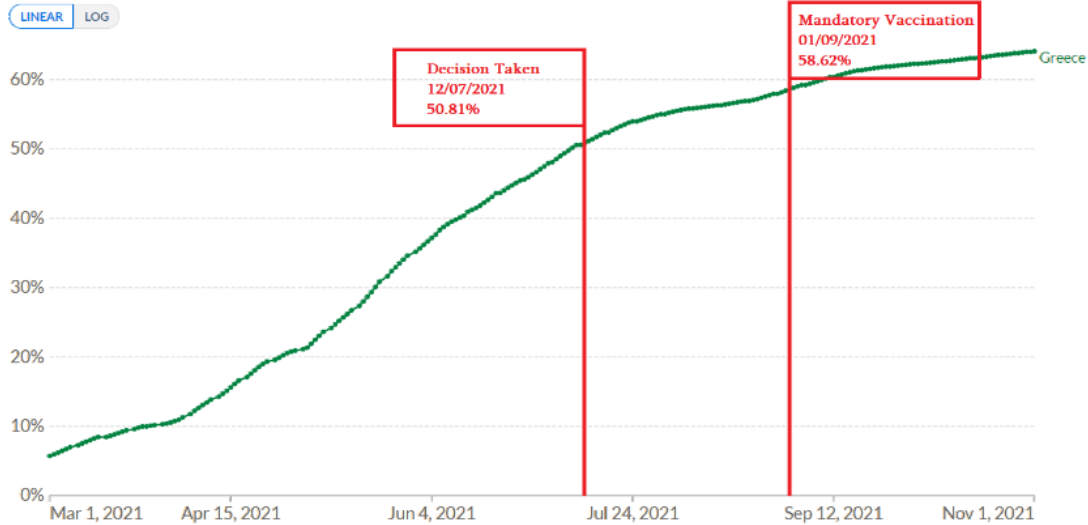
Source: Official data collated by Our World in Data

- Mandatory vaccination - Public sector employees, employees in air, rail, and marine transportation, and respective travelers
- From 01/11/2021 Members and visitors of the Canadian Senate

Figure 54. Greece – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.



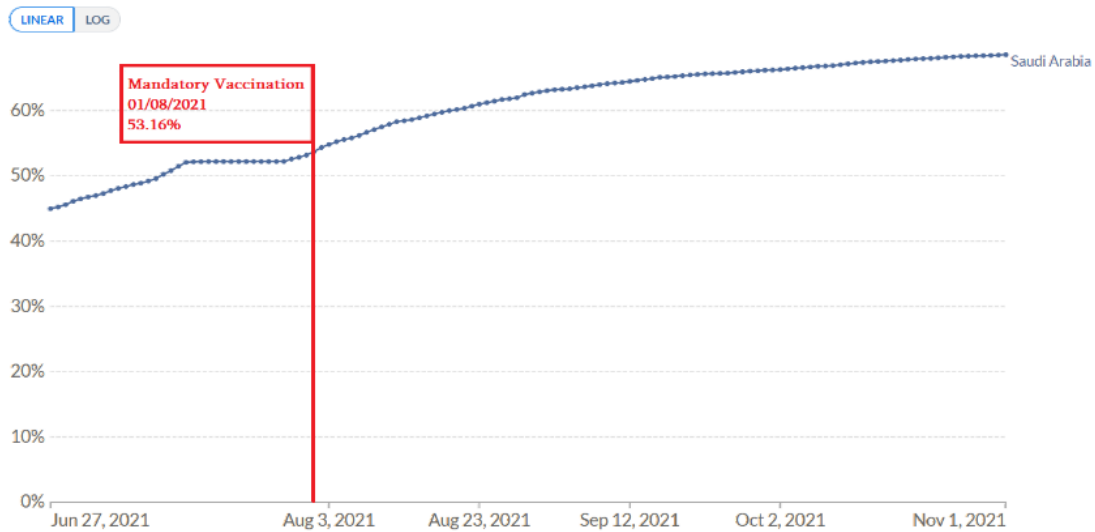
Source: Official data collated by Our World in Data

- Mandatory vaccination - Healthcare personnel and long-term care facility workers

Figure 15. Saudi Arabia – Share of people receiving at least one dose of COVID-19 vaccine

Share of people who received at least one dose of COVID-19 vaccine

Total number of people who received at least one vaccine dose, divided by the total population of the country.



Source: Official data collated by Our World in Data

- Mandatory vaccination - All public and private sector workers

Figure 16. Saudi Arabia – Daily COVID-19 vaccine doses administered per 100 people (7-day rolling average)

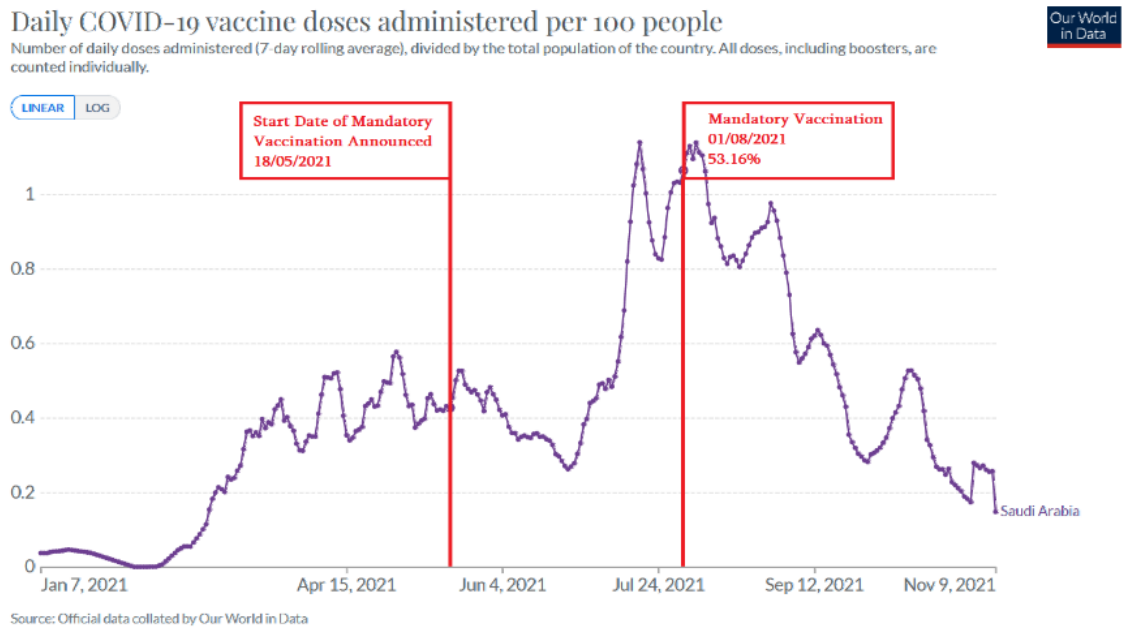
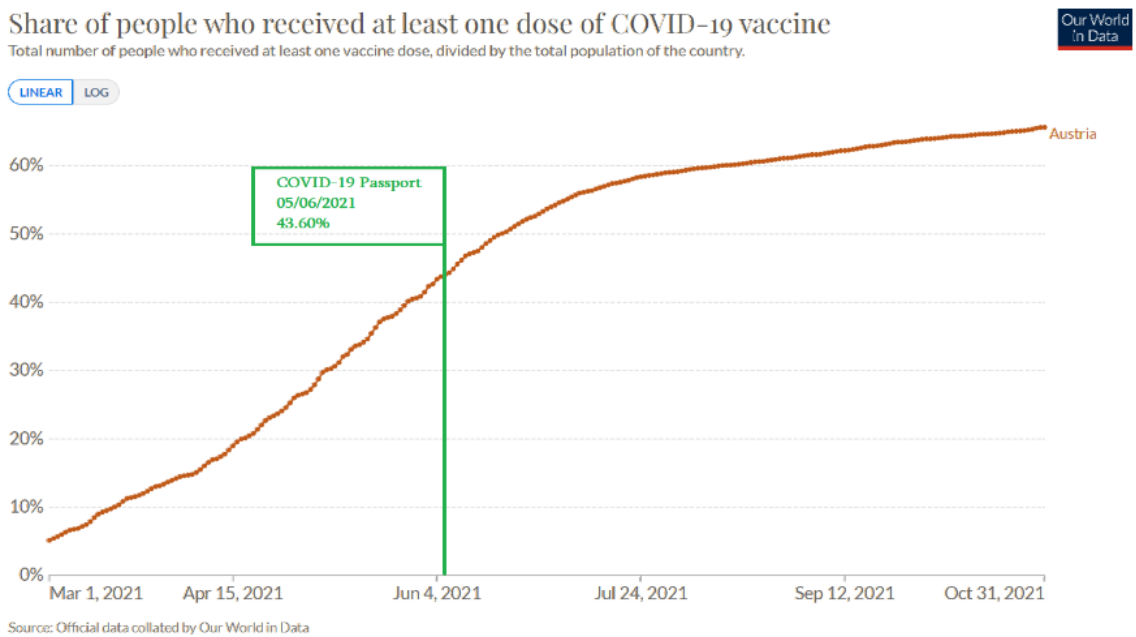
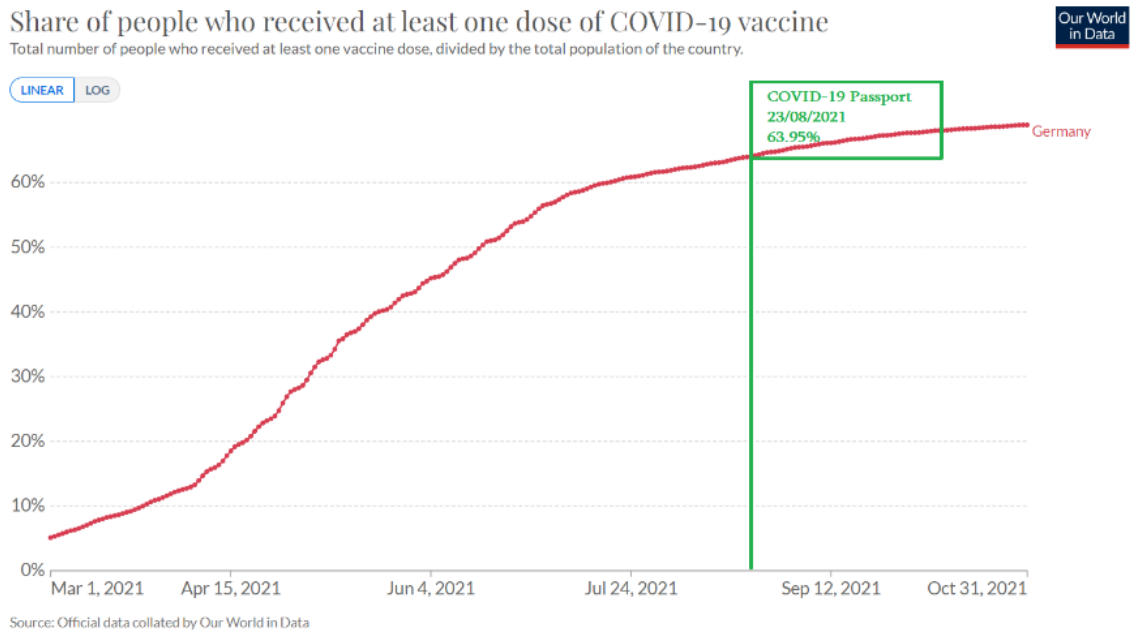


Figure 17. Austria – Share of people receiving at least one dose of COVID-19 vaccine



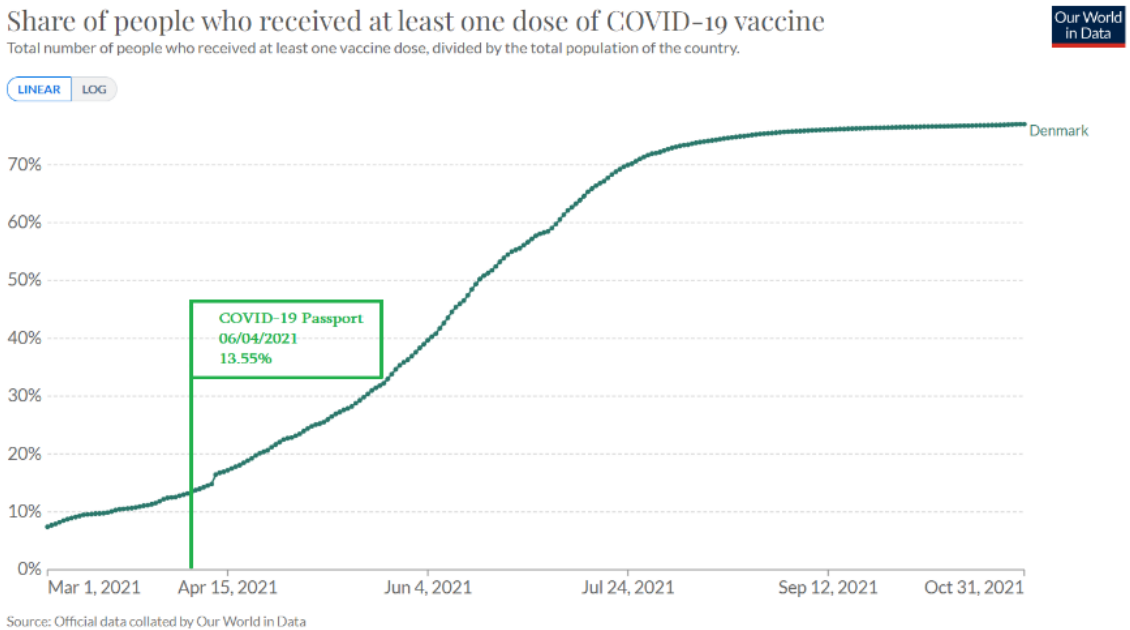
- COVID-19 Passport - Catering and entertainment facilities, hotels, outdoor and indoor events

Figure 68. Germany – Share of people receiving at least one dose of COVID-19 vaccine



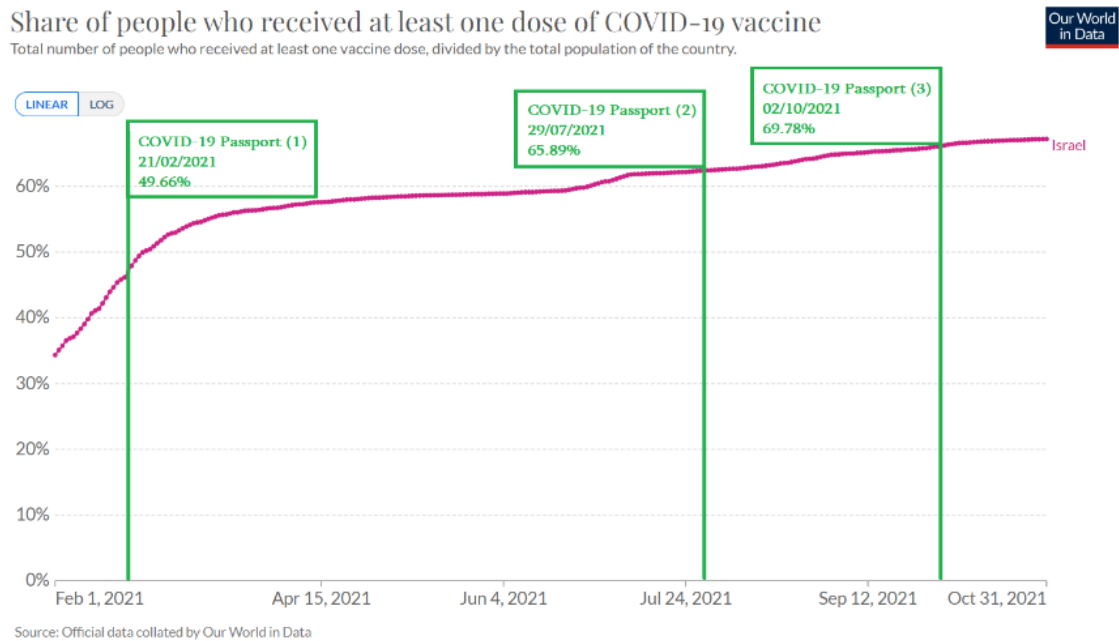
- COVID-19 Passport - Catering and entertainment facilities, hotels, beauty parlors, long-term care facilities.

Figure 19. Denmark – Share of people receiving at least one dose of COVID-19 vaccine



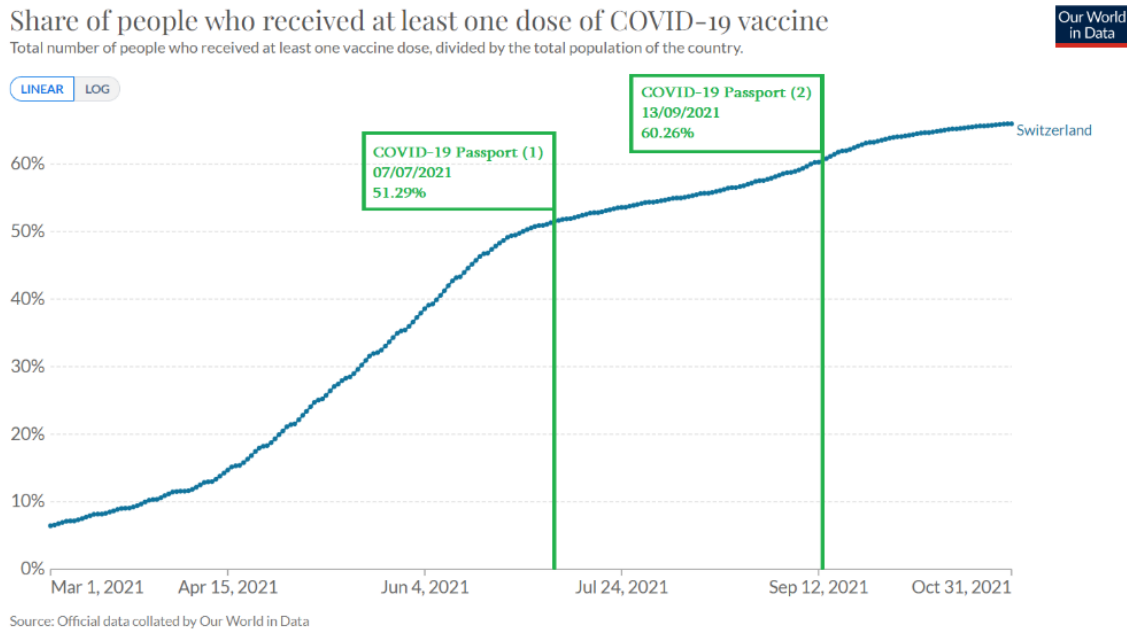
- COVID-19 passport - Beauty parlors, outdoor and indoor events, all other events
- All restrictions were lifted on the 10th of September

Figure 20. Israel – Share of people receiving at least one dose of COVID-19 vaccine



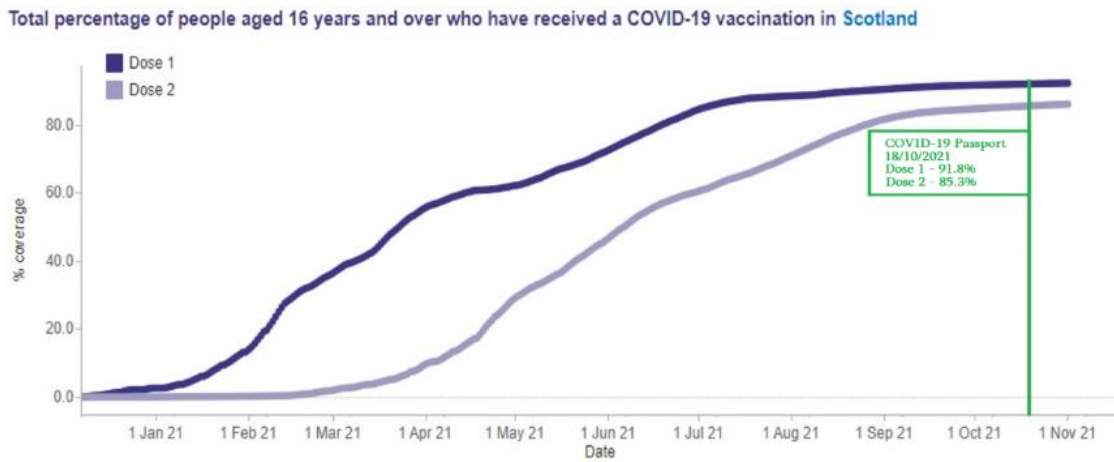
- COVID-19 Passport (1) - Entertainment and cultural events, catering facilities, fitness facilities, places of worship
- COVID-19 Passport (2) – Reinstatement of regulations with an extended scope of application
- COVID-19 Passport (3) – The third (booster) dose was added

Figure 21. Switzerland – Share of people receiving at least one dose of COVID-19 vaccine



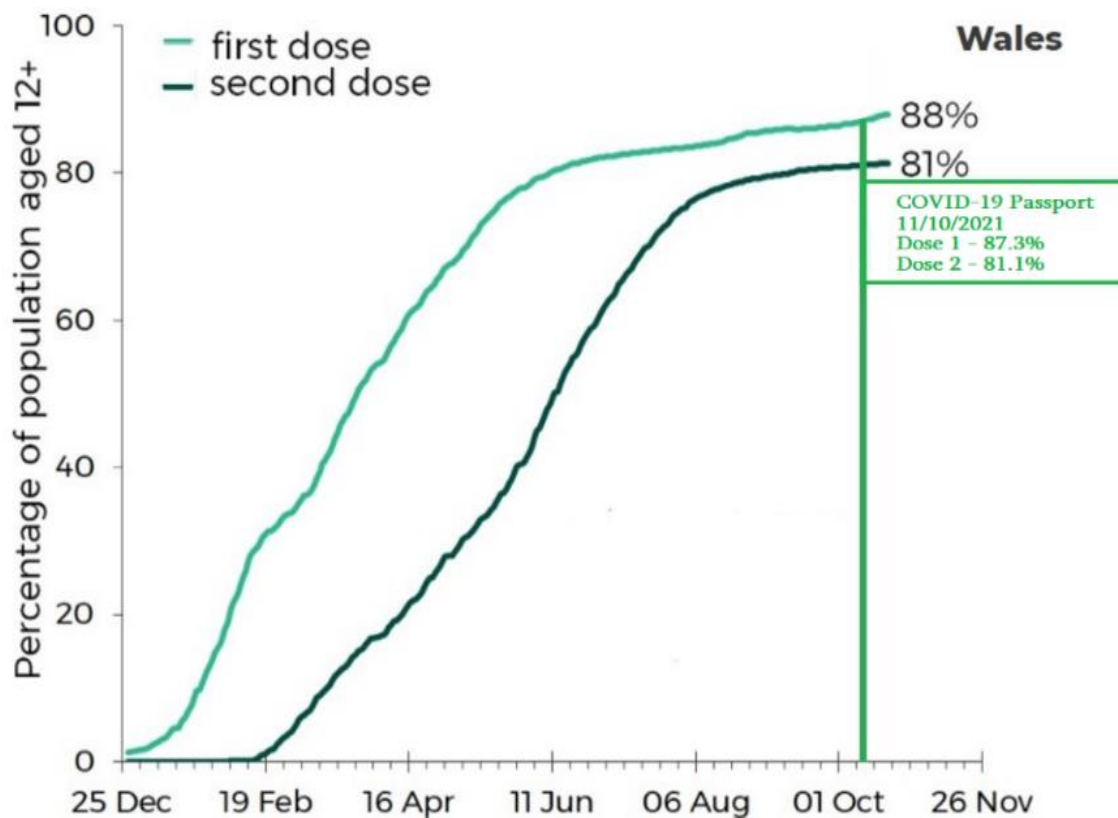
- COVID-19 Passport - Entertainment and cultural events, catering facilities, indoor events.

Figure 22. Scotland – Total percentage of people aged 16 years and over who have received a COVID-19 vaccination



- COVID-19 Passport - Night clubs, indoor venues with more than 500 people, outdoor venues with more than 4,000 people, any other event with more than 10,000 people

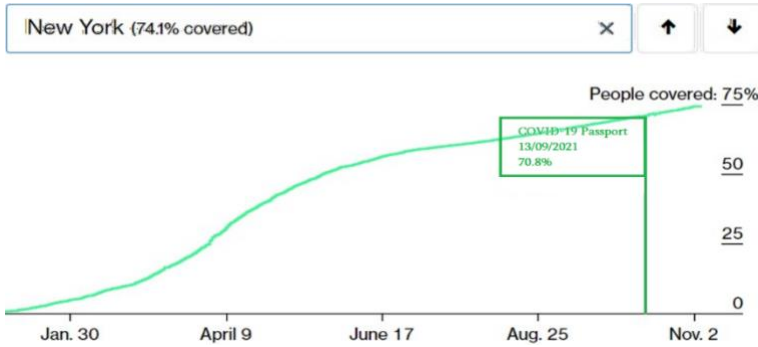
Figure 73. Wales – Share of people receiving the first and the second doses of COVID-19 vaccine



- COVID-19 Passport - Night clubs, indoor venues with more than 500 people, outdoor venues with more than 4,000 people, any other event with more than 10,000 people

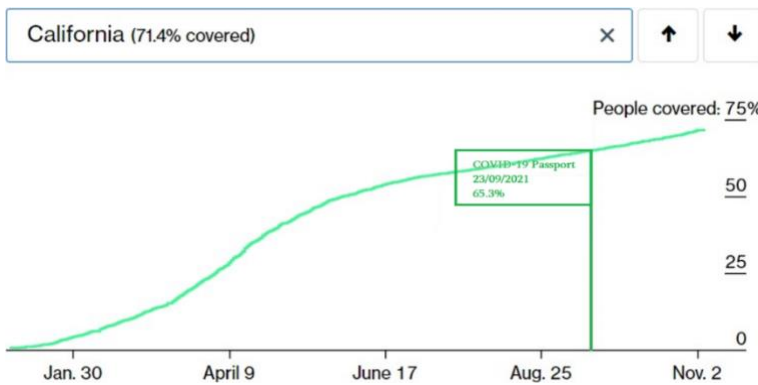
Figure 84. USA – Share of people receiving the first and the second doses of COVID-19 vaccine

USA, New York



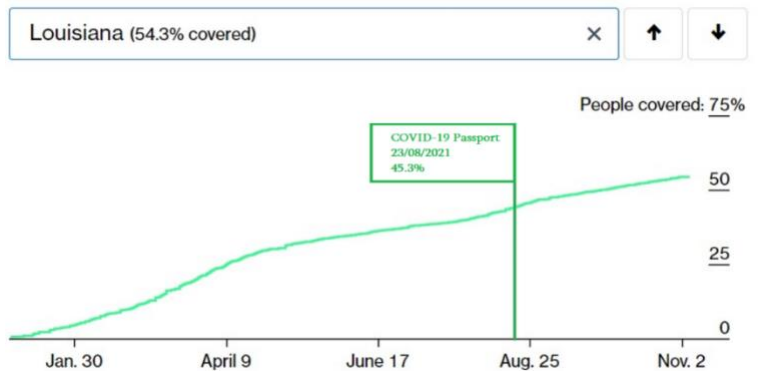
- COVID-19 Passport - Bars, restaurants, fitness facilities

USA, California



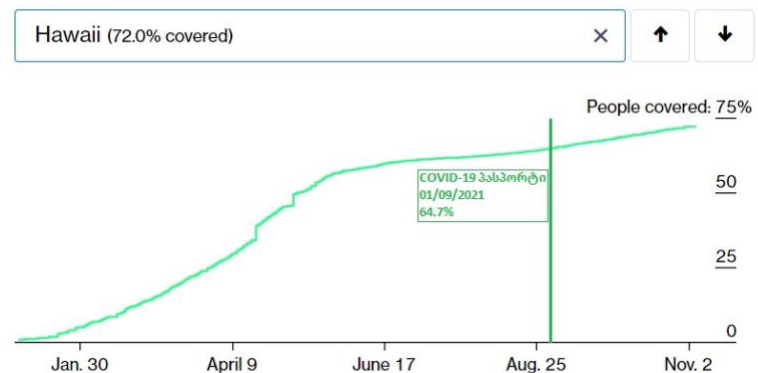
- COVID-19 Passport - Indoor events with more than 10,000 people

USA, Louisiana



- COVID-19 Passport - Catering facilities sports events, casinos, gyms, outdoor events with more than 500 People

USA, Hawaii



- COVID-19 Passport – At universities if students decide to attend lectures on-site