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THE GLOBAL ENVIRONMENT OF VACCINATION MANDATES

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Abstract The COVID-19 pandemic demonstrated how our global economy permits the quick spread of diseases and requires States to engage in a global response to effectively manage this spread. At the core of this response, is the individual State's responses towards limiting the spread of viruses through vaccinations. However, due to diverse political, cultural, societal, and legal structures, States still do not have a uniform approach to responding to COVID-19. Thus, this article addresses the history of vaccines and the globalization of vaccine law during the COVID-19 pandemic, including the role of vaccination mandates. Moreover, this article discusses how State mandates to vaccination can be developed through legal and political means but also through cultural and societal structures. This article also addresses the impact of disinformation and misinformation in a State's successful implementation and dissemination of vaccines. Lastly, this article briefly discusses the vaccine injury compensation system in select States and under the COVAX vaccination program.

Keywords
vaccination, mandates, international law, compensation system, pandemic

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1 Introduction

Vaccination is a miraculous technology, able to address the global problem of the transmission of infectious diseases, but it is also one that is inconsistently applied around the world. This inconsistency arises from a variety of factors, including cultural distinctions, historical distrust between certain countries or regions, and differing levels of access to the resources needed to successfully carry out a program of mass vaccination. With no international mechanism in place to mandate vaccination, States must rely on the will of their neighbors and their cultural proclivities to prevent diseases from spreading from one country through the next.

2 History

The discovery of the first vaccine, over 225 years ago, quickly prompted governments around the world to endorse the practice of vaccination. Within three years of English physician Edward Jenner's 1798 publication demonstrating the effectiveness of the treatment, the practice had been endorsed by Sultan Selim III of the Ottoman Empire, Dowager Empress Maria Feodorovna of Russia, and Carlos IV, King of Spain. As a result of such widespread endorsements, Philadelphia doctor John Redman Coxe proclaimed that "we may date the downfall of further opposition" to vaccination (Coxe, 1802). Further support for vaccines and vaccination was also demonstrated in 1802, by Feodorovna decreeing a lifetime pension for the first Russian vaccine recipient. Another chapter in the spread of the practice of vaccination opened in 1803, when Carlos IV sent an expedition to America to introduce smallpox vaccination to Spanish colonies, with 22 orphans aboard to act as carriers of a fresh supply of the vaccine matter, with the virus being transferred from one orphan to the next to keep it alive for the journey (Burgen, 2021).

In the centuries since, the world has steadily moved towards a uniform understanding that robust and worldwide vaccination for a wide variety of diseases is a public policy that is almost universally beneficial (Abramson, 2022). Particularly in the last century, coordinated global efforts against diseases once ruinous to entire populations have either brought the numbers of deaths associated with these diseases down to a fraction of their former levels, or entirely eradicated diseases from the planet. However, even as these efforts proved successful, both unwitting

misinformation and calculated efforts at division have steadily worked to undermine public confidence in vaccines and vaccination.

These trends have come to a head during the time of the COVID-19 pandemic, with vaccination mandates consequently being imposed on hesitant populations, resulting at times in both increased vaccination rates and, paradoxically, increased suspicion and resistance towards the vaccines themselves. Further complicating response to the pandemic, these questions have taken on political dimensions not seen in over a century and a half. In democracies with political parties seeking to sway potential voters, there is a strong incentive for minority parties to criticize and diminish whatever measures have been taken by the governing party or parties to address the pandemic. This now encompasses a novel degree of political figures embracing anti-vaccine advocacy and misinformation for the purpose of obtaining the support of citizens inclined towards those views.

Political pandering to those opposed to vaccination can initiate a vicious circle; rhetoric aimed at enticing the support of such constituents can also serve to dissuade those as-yet undecided about vaccination. Under non-democratic governments, forces opposing the political party in power similarly have an incentive to criticize pro-vaccination governmental responses, and such governments have incentives to misuse measures intended to limit the spread of disease to instead limit the expression of anti-government sentiment.

2 The globalization of pandemic response

National governments rarely take much notice of the internal health and safety laws of their neighbors, much less those of countries more distantly located. The United States government, for example, has little concern about the fact of the legal drinking age being 21 throughout the U.S. (Nat'l Min. Drinking Age Act of 1984, 23 U.S.C. § 158), but 16 in Dominica (Laws of Dominica Liquor Licences Act Chapter 70:03, Part IV, Sec 15(f)) and Luxembourg (Loi du 22 décembre 2006 portant interdiction de la vente de boissons alcooliques à des mineurs de moins de seize ans (22 décembre 2006)), and 18 in Bolivia (Law 259 Against the Sale and Consumption of Alcoholic Beverages (2012) Article 20) and Slovenia (Zakon o omejevanju prodaje alkohola (Restriction on the Use of Alcohol Act). Underage Americans living near the Mexican and Canadian borders routinely cross those borders to take advantage of lower drinking ages without drawing a response from the U.S. government, despite

studies showing that these underage (by American standards) drinkers are more likely to engage in unsafe behaviors like excessive drinking or impaired driving (Clapp, Voas & Lange, 2001).

One contrasting example to this trend is the propensity of U.S. presidential administrations to seesaw between contradictory positions on certain funds going to countries where they might be used to support abortion. Variously referred to as the "Mexico City policy," or as the "global gag rule" the policy blocks U.S. federal funding from being disbursed to non-governmental organizations (NGOs) that provide abortion counseling or referrals, advocate legalizing abortion where it is illegal, or expand abortion services (van der Meulen Rodgers, 2019). First implemented by the Reagan administration in 1985 (CBS, Jan. 23, 2017), the policy has since been rescinded by every subsequent Democratic presidential administration, and reinstated by every subsequent Republican presidential administration (Lee, 2017). Despite this example, the United States has not taken positions on making comparable funds to other countries contingent on the adoption by those countries of any particular policy on vaccination.

In epidemic and pandemic times, the vaccination laws of diverse countries become the concern of every country to which infectious disease may be transmitted. As such, 196 State parties are signatories to the International Health Regulations ("IHR"), an international agreement intended to ensure that there is both global coordination and a legal framework for the "prevention, detection, and containment of health risks and threats." (Aavtisland, 2021). Application of the IHR during the early phases of the COVID-19 pandemic response has been widely criticized due to the lack of compliance by States parties with the treaty's human rights and reporting obligations (Aavtisland, 2021; see also Sohn et al., 2021). In response to the identified gaps and failures of the IHR, the World Health Assembly announced in December 2021 that it would begin the process for developing a new convention under the World Health Organization's ("WHO") Constitution to strengthen pandemic prevention, preparedness, and response. ("World Health Assembly agrees to launch process to develop historic global accord on pandemic prevention, preparedness, and response" WHO (Dec. 1, 2021). While it is a beneficial exercise for States to identify "lessons learned" from the COVID-19 response and implementation of the IHR, it will be essential for the effectiveness of any new convention on State obligations to prepare and respond to global pandemics to address the gaps in the IHR such as the lack of compliance mechanism for ensuring States are fulfilling their

preparedness obligations; and addressing the ability of the global community to monitor simultaneous pandemic response and human rights obligations during future public health emergencies (Aavtisland et al., 2021).

International treaties and agreements, such as the IHR, exist for the purpose of promoting uniformity with respect to the regulation of the safety in effectiveness of pharmaceutical products, and intellectual property protection for the same. For example, the Pharmaceutical Inspection Convention and the Pharmaceutical Inspection Co-operation Scheme, jointly referred to as PIC/S, establishes a number of key mutual recognition of inspection of pharmaceutical manufacturing operations, and equivalent principles of inspection methodology between member countries, provides resources and mechanisms for consistent training of inspectors, harmonizes written standards of Good Manufacturing Practices, and sets up lines of communication between member State inspectors and inspectorates. This, in turn, decreases the time spent in inspection and other product registration processes for products entering international trade, reducing costs for manufacturers (Nascimento et al., 2021).

Similarly, the Agreement on Trade-Related Aspects of Intellectual Property Rights, or TRIPS Agreement, is an intellectual property treaty that is intended to ensure that foreign patents (including vaccine patents) are treated equally to national patents in signatory states. (WTO, 2022; TRIPS Agreement, Annex 1C Marrakesh Agreement Establishing the World Trade Organization, signed in Marrakesh, Morocco, 15 April 1994). However, during the COVID-19 pandemic the TRIPS Agreement has been frequently at the center of controversy surrounding whether certain intellectual property protections for the COVID-19 vaccines should be waived to help expand access to the vaccines globally.

However, despite these limited agreements for pandemic responses and intellectual property rights, there has yet to be an agreement developed with respect to the standardization of laws governing vaccine mandates and requirements. Currently, no process exists for one country to object to the absence of a vaccination requirement in any other country, short of stopping unvaccinated nationals of that other country from crossing its borders. Even that option has historically been a rarely exercised and inconsistently applied. However, it should be noted that complete entry bans without some form of exceptions could potentially violate existing human rights obligations under the Universal Declaration of Human Rights. (Universal

Declaration of Human Rights, G.A. res. 217A (III), U.N. Doc. 1/810, at art. 13 (1948). Specifically, under Article 13 of the Universal Declaration of Human Rights and Article 12 of the International Convention on Civil and Political Rights ("ICCPR") all individuals have the "right to leave any country, including his own, and to return to his own country", International Convention on Civil and Political Rights, 999 U.N.T.S. 171 (Dec. 16, 1996)). The UN Human Rights Committee has interpreted the "his own country" clause to be broader than nationality, and has permitted individuals to define a State as its own country based on close ties with the State such as living the majority of their lives within the given State (Martha & Bailey, 2020). Thus, a State's policy that completely bans unvaccinated non-nationals from entry without permissible exceptions through quarantining and isolation would likely violate human rights obligations under international law. Armed conflicts can also impact a State's ability to vaccinate its population. For example, the Russian invasion of Ukraine has added a further dimension of uncertainty to vaccination efforts, with both States' already experiencing low overall vaccination rates, and efforts to continue vaccination of the regional population called into question by events on the ground (Baumann & Lopez, 2022). The hostilities in Ukraine not only impair the COVID-19 pandemic vaccination response, but have also impaired the ability of medical facilities and health care providers to administer routine childhood vaccines such as those for polio, tetanus, and diphtheria (Schlein, 2022; Chumachenko & Chumachenko, 2022). Thus, these conflicts pose not only a threat to addressing global pandemics, but also create the potential for certain vaccine eradicated diseases to reemerge as endemics within these States.

While the conflict in Ukraine is currently at the forefront of global attention, this is not the first time an armed conflict has threatened the ability of a State to vaccinate its population and required NGOs to support the State's vaccination efforts. For example, beginning in 1985, Sudan instituted "days of tranquility and corridors of peace" between the government and rebel forces to permit UNICEF to carry out vaccination campaigns in that country (Sudan, Statement before the CRC, UN Doc. CRC/C/SR.70, 1 Feb. 1993, §§ 13 and 20), and in 1988, hostilities ongoing in El Salvador had to be suspended to permit the vaccination of children in that country (Colombia, Statement before the HRC, UN Doc. CCPR/C/SR.819, 14 July 1988, § 8). Thus, while there are means for ensuring vaccination during armed conflicts this requires all parties to the conflict to agree to temporary cessations in fighting for the priority of public health, a compromise States have been unwilling to make in the current Russia-Ukraine conflict.

3 Vaccination mandates around the world

3.1 Public vaccination mandates

Government-imposed childhood vaccination mandates are found to varying degrees in countries around the world, with most European countries having either express mandates in place, or strong recommendations arising from government health agencies (Haverkate, 2012). Notably, however, many countries with vaccination mandates in their laws have a poor record of enforcement of these mandates (Walkinshaw, 2011).

In the European Union, Article 8 of the European Convention on Human Rights states that every person "has the right to respect for his private and family life," though providing exceptions "for the protection of health or morals, or for the protection of the rights and freedoms of others." In April 2021, the European Court of Human Rights handed down a ruling that a vaccination mandate for childhood vaccinations enacted by the Czech Republic did not violate this Article (Case of Vavřička and Others v. the Czech Republic, Nos. 47621/13, 3867/14, 73094/14, 19306/15, 19298/15, and 43883/15 (ECtHR, April 8, 2021)). The same court has since rejected multiple requests that interim measures be taken against compulsory vaccination measures imposed in response to the COVID-19 pandemic (Vinceti, 2021).

Following the deployment of COVID-19 vaccines, many countries began instituting new vaccination requirements for certain populations such as healthcare workers. By July 2021, France, Greece, Italy, and the United Kingdom had announced plans to mandate vaccination for some segment of their healthcare workforce, with requirements generally scheduled to take effect later in the year (Cunningham & Noack, 2021). However, these mandates were not without exceptions. For instance, France's vaccine mandate permitted doctors to excuse individuals from the vaccine requirement under certain circumstances (Ledsom, 2022). Similarly, in the United Kingdom individuals could be exempted from the vaccination requirement for medical reasons (GOV.UK (May 22, 2022)).

The United States also followed with a mandate announced in September directed towards recipients of federal Medicare funds, which is the United States federal health insurance programs for individuals over 65; some younger individuals with disabilities; and individuals with end-stage renal disease (CMS, Nov. 5, 2021). The United States mandate also created exceptions to vaccination for individuals who could not get vaccinated due to disability, medical condition, or sincerely held belief, practice, or observance (CMS, 2021). The United States government attempted to impose a larger COVID-19 vaccine mandate under the Occupational Safety and Health Administration ("OSHA"), the United States' regulatory agency for ensuring a safe and healthy workplace (National Federation of Independent Business, et al. v. Department of Labor, Occupational Safety and Health Administration, 142 S.Ct. 661 (2022)). Under the proposed mandate, all employers with 100 or more employees would be required to be vaccinated against COVID-19, or participate in a weekly COVID-19 testing program at their own expense and wear a mask in the workplace (CMS, 2021). However, the United States Supreme Court, the highest Court in the United States, granted an injunction against the mandate on the basis that OSHA lacked the authority to impose such a broad mandate (CMS, 2021). The Court reasoned that OSHA's mandate was to ensure workplace safety from occupational hazards and was not to more broadly to ensure employee's public health safety (CMS, 2021). In response, the United States government withdrew the mandate and has not yet issued a more limited rule. The WHO, at that time, advised vaccination mandates, with one senior WHO official deeming mandates "an absolute last resort and only applicable when all other feasible options to improve vaccination uptake have been exhausted." (WHO, 2021). While conceding the effectiveness of mandates in appropriate circumstances, the WHO cautioned that mandates could negatively impact public confidence and public trust in the vaccines, and also asserted that "mandates should never contribute to increasing social inequalities in access to health and social services." Nevertheless, the pandemic persisted, as did the vaccination hesitancy that spurred increasingly aggressive vaccination mandates.

In April 2020, Germany's Federal Constitutional Court rejected complaints brought by health care workers opposed to COVID-19 vaccination mandates imposed by the national government, finding that the regulations in question serve to protect the public health generally, and the health of vulnerable groups in particular (Leitsätze zum Beschluss des Ersten Senats vom 27. April 2022 - *1 BvR 2649/21*).

Going in a different direction in May 2022, the Supreme Court of India ruled that: "Bodily integrity is protected under the law and nobody can be forced to be vaccinated," thereby reversing limitations on access to public benefits and services imposed by some states of India (Jacob Puliyel v Union of India and Others [Writ Petition (Civil) Number 607 of 2021], Dwivedi, 2022). The court advised that "all authorities in this country, including private organisations and educational institutions, review the relevant orders and instructions imposing restrictions on unvaccinated individuals in terms of access to public places, services and resources, if not already recalled." However, the court also allowed for "certain limitations on individual rights" as needed to protect the public health in specific instances (Dwivedi, 2022).

A 2021 study in 'The Lancet' reported that countries that introduced early COVID-19 vaccine certification--an element of proof precedent to the introduction of vaccination mandates--saw a general increase in vaccination rates. This increase was most pronounced among people under 30, with some increase among those aged 30-49. The increase began before the mandates themselves were implemented, projecting anticipation of the mandate (Mills & Rüttenauer, 2021).

The chancellor of Austria announced in January 2022 that it would institute a fine of up to €3,600 for all unvaccinated adults beginning in March of that year (Eder, 2022). The mandate was enacted into law by the Austrian parliament in February 2022 (Oltermann, 2022), but was suspended by the government almost immediately after going into effect on the grounds that it was disproportionate to the COVID-19 situation then prevalent in the country (Schengen Visa News, 2022). Despite this sequence of events, the COVID-19 vaccination rate in Austria did not appreciably change between the announcement of this scheme, and its ultimate suspension, remaining stagnant after that point.

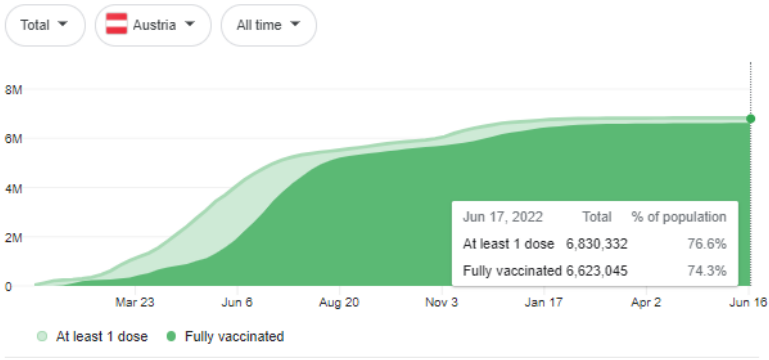

Figure 1: COVID-19 vaccination rates in Austria as of June 2022. Data courtesy of Our World in Data.
Source: own.

In France, the government-imposed vaccination requirements for citizens to access certain public amenities. Under France's vaccine pass requirement, individuals over the age of 16 were required to demonstrate they had been vaccinated against COVID-19 to enter restaurants, bars, fairs, seminars, trade schools, and public transportation (France24, 2022). The vaccine pass allowed for an emergency exception, as well as, an exceptions for individuals who had "compelling family or health reasons" (France24, 2022). However, the vaccine pass was short-lived and was largely revoked by the French government as of March 14, 2022 for all locations except health care facilities such as hospitals, retirement homes, and facilities that care for persons with disabilities (Consulat General De France A Washington, 2022).

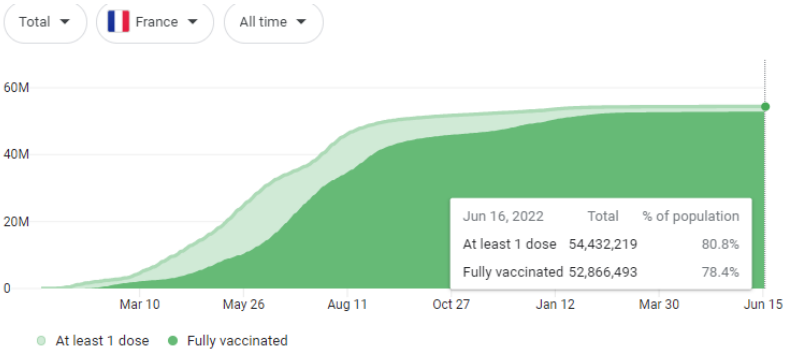

Figure 2: COVID-19 vaccination rates in France as of June 2022. Data courtesy of Our World in Data.
Source: own.

3.2 Cultural mandates

It should be unsurprising that Cuba has one of the highest COVID-19 vaccination rates in the world, a trait that it has long shared for most vaccines deployed in the country (Reed & Galindo, 2007). A 2015 report attributed this to the country's use of community groups to "carry out directives from health authorities and follow up on vaccine schedules" (Browne, 2015). As of the mid-2000s, most of the vaccines used in Cuba were manufactured in the country (Reed & Galindo, 2007). The country has a longstanding practice, flowing from its national promotion of the production of physicians, of having a health clinic in every neighborhood (Meredith, 2022).

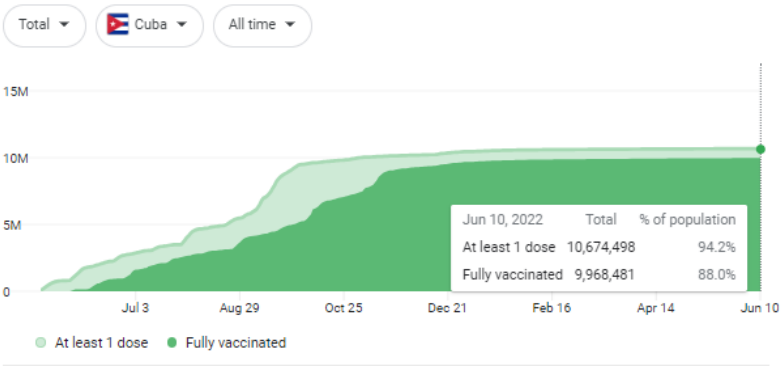

Figure 3: COVID-19 vaccination rates in Cuba as of June 2022. Data courtesy of Our World in Data.
Source: own.

Cuba also claims the unique advantage of being one of the smallest countries to develop and deploy its own COVID-19 vaccines (Meredith, 2022). China, which has also developed its own COVID-19 vaccines, has similarly reported one of the highest levels of COVID-19 vaccination rates.

Oddly, neither Cuba nor China has formally implemented a COVID-19 vaccination mandate, with the Cuban government expressly claiming that they are not needed due to the desire of the population to be vaccinated (O'Connor, 2021). Instead, in both authoritarian systems, such a formal implementation is not needed due to the population having a cultural understanding that they are expected to be vaccinated for the disease, whether they wish to or not. China, in particular, has increasingly

leaned into its capacity to police individual behavior through a culture of intensive monitoring. Individuals are keenly aware of the government's knowledge of their vaccination status, and its power over their ability to move, work, and otherwise advance in life.

Unlike Cuba, Argentina does have vaccination mandates–among the most substantial vaccination mandates in the world, requiring adherence to a robust vaccination schedule in order for an individual to advance grades in school, or get a driver's license, marriage license, or passport (Kraut & Perez, 2022). Notably, however, COVID-19 vaccination has not been mandated in Argentina. Thus, the high rates of uptake must be attributed to the broader cultural acceptance of vaccination. The Argentine vaccination law might therefore be seen as a reflection of the values of the people, rather than as an imposition upon them.

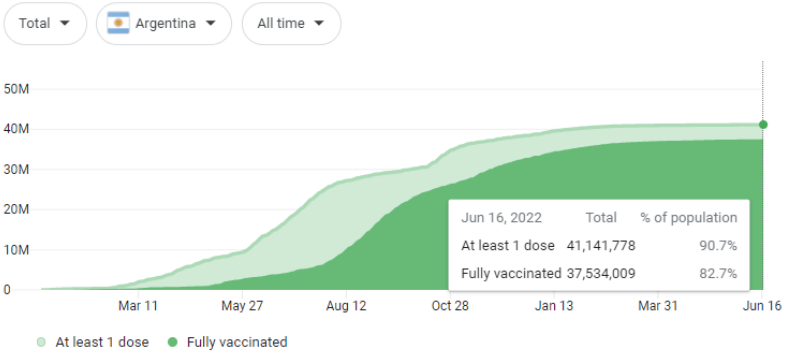

Figure 4: COVID-19 vaccination rates in Argentina as of June 2022. Data courtesy of Our World in Data.
Source: own.

Japan's Preventive Immunization Law "made vaccination a duty of parents and physicians" from its enactment in 1948 until its amendment in 1994, making vaccination voluntary rather than mandatory (Kuwabara, 2021). Even with respect to vaccines that are funded by the government, "the general public has no cooperative responsibility to be vaccinated" against those diseases (Enami & Otsubo, 2010).

A telling incident in Japan was the 2019 defamation lawsuit brought against a Japanese medical journalist who wrote that a neurologist had fabricated data linking HPV vaccination to brain damage in mice. The Japanese health ministry had found that the claimed linkage had not been proven, and was unsupported by other studies, but the court nonetheless found that the reporter's assertion of intentional fabrication was not supported, and was therefore defamatory (Normile, 2019).

Like Cuba and Finland, Japan has not imposed vaccination mandates with respect to COVID-19. Instead, it has leaned on educational efforts, and despite the difficult recent history of the country with respect to childhood vaccines, these efforts have borne fruit. As of June 2022, over 80 percent of the country's population was voluntarily fully vaccinated against COVID-19, a percentage exceeding that achieved by many countries that had indeed opted to implement vaccination mandates.

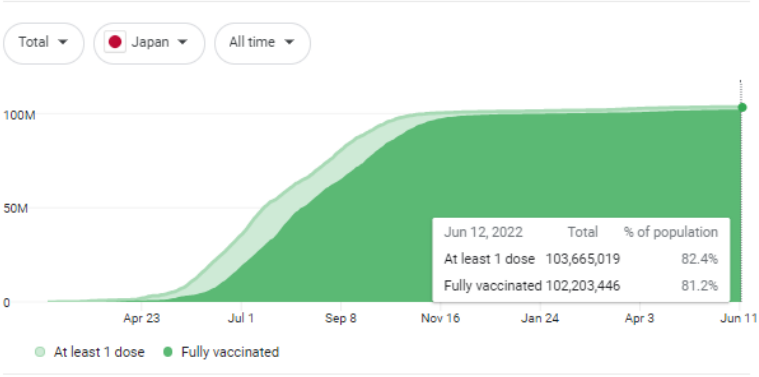

Figure 5: COVID-19 vaccination rates in Japan as of June 2022. Data courtesy of Our World in Data.
Source: own.

3.3 Cultural opposition to vaccination

A counter to cultural paradigms in which vaccination is trusted, leading to high levels of uptake, is the incidence of cultures where vaccination has come to be mistrusted.

In 2021, Vietnam experienced vaccine hesitancy towards COVID-19 vaccines produced by China (Ngyuyen, 2021). The Vietnamese hesitation was based on the cultural and societal mistrust of the Chinese from previous tensions between the two States in the South China Sea (Ngyuyen, 2021). One study of sentiments in

Indonesia, Malaysia, The Philippines, Singapore, Thailand, and Vietnam, found that the Chinese COVID-19 vaccine was perceived as having a poor reputation and being "second-rate" (Zaini & Thi Ha, 2021).

Russia, another authoritarian regime that also developed its own COVID-19 vaccine, has not had as much success with vaccinating its population (Stronski, 2021). In 2022, Russia had vaccinated less than 60 percent of its population against COVID-19 (Reuters, 2022).

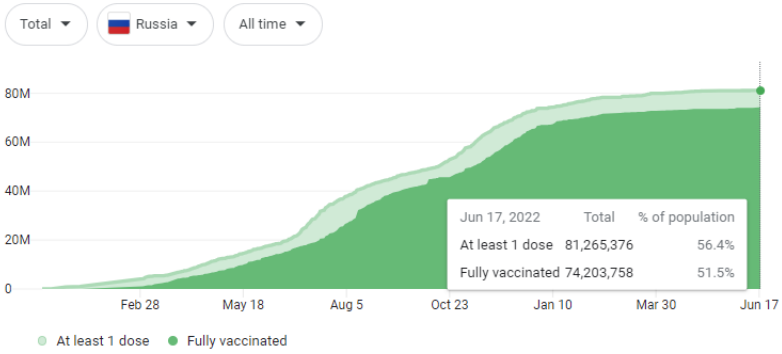

Figure 6: COVID-19 vaccination rates in Russia as of June 2022. Data courtesy of Our World in Data.
Source: own.

Afghanistan experienced virtually no success in promoting COVID-19 vaccination during the period of the United States occupation of the country. Approximately one month after the withdrawal of American troops from that country, the new Afghan government requested help from international agencies in getting their population vaccinated. Although this increased vaccination rates several times over, this ultimately has only taken the population from low single digits to slightly over 14 percent of the population being vaccinated for COVID. This would appear to reflect a combination of lack of government resources and organization for distribution of vaccines, and continuing distrust in the technology.

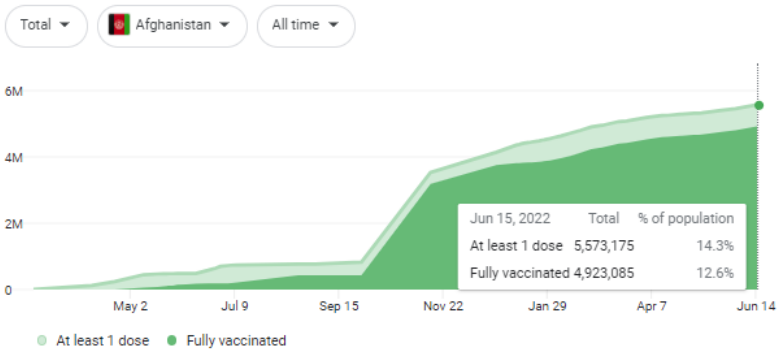

Figure 7: COVID-19 vaccination rates in Japan as of June 2022. Data courtesy of Our World in Data.
Source: own.

3.4 Private vaccination mandates

One particularly stark contrast between the United States and a majority of other countries in the world is the difference in the applicability of public and private vaccination mandates. It is substantially easier in the U.S. than in EU countries, and many other countries around the world, for a private business to mandate employee vaccination of its own accord. It may be argued that there are strong public policy arguments favoring allowing employers to mandate vaccination of employees. Employment itself (or, at least, the prospect of unemployment) provides a powerful and practical leverage over the affected population. Employers rationally reviewing the impact of vaccination are likely to find it more cost-effective to have a vaccinated workforce than a workforce substantially more susceptible to hospitalization or death due to an unpredictable disease. Individual employers will likely have high awareness of what types of employees are most susceptible to catching or transmitting an infection through their workplace.

In China, as of January 2021, employers were legally barred from mandating that employees receive COVID-19 vaccines, with one analysis concluding that "what the employers can do is to encourage as many employees as possible to take the vaccine." The analysis noted that "the employer may still unilaterally change the work position of the employee if he/she refuses vaccination without proper reason and in the opinion of the employer, the employee' continuous work at his/her work position may be exposed to high risks of COVID-19 and may affect the safety of

the entire work place," but found that changes to the employees pay or employment status were prohibited (Yu & Hua, 2021).

In France, as of September 2021, unless employees are in a sector for which the government has mandated vaccination, "the employer cannot ask about employees' or service providers' status of vaccination, nor require them to be vaccinated" (Froger-Michon & Bénistan, 2021). In that same month, the Slovakian National Labour Inspectorate issued a statement interpreting Slovak and EU regulations to affirm limitations of employers seeking to require that employees disclose their COVID-19 vaccination status (Stark Čorba & Kundrik, 2021). This, in turn, precludes employers from mandating vaccination, since the mandate would require such a disclosure to be enforceable. In the Czech Republic, no step has been taken to permit employers to mandate employee vaccination due to national principles of equal treatment and non-discrimination, in light of the possibility that non-vaccination may result from factors like age, disability, or religious beliefs (Matějovský et al., 2021).

In contrast, in October 2021, Hungary enacted a law that grants employers the right to mandate vaccination as a condition of employment if, given the conditions of the workplace, this serves the interests of protecting the health of individuals (Government Decree 598/2021. (X. 28.) on the Protection of the Workplace against the Coronavirus, Oct. 21, 2021). Under the enactment, employers may place unvaccinated and unexempted employees on unpaid leave, and may terminate their employment one year thereafter. Prior to placing employees on leave for failure to be vaccinated, the employer is required to perform an assessment of whether vaccination is necessary to protect public health, and inform employees of the requirement, as well as the consequences of failure to comply.

In the United States, it is generally the default position of state governments that employers are allowed to mandate that employees be vaccinated. However, in response to political pressures arising out of the COVID-19 epidemic, several U.S. states have moved in the opposite direction, attempting to place restrictions on employer vaccination mandates. For example, in Montana, employers and government entities are prohibited from "discriminating" based on vaccination status (National Academy for State Health Policy, 2022). Meanwhile other states like Florida, South Carolina, West Virginia, Indiana, Tennessee, Alabama, Mississippi, Arkansas, Kansas, Nebraska, Texas, Utah, Arizona, and North Dakota, have placed

limitations on vaccine mandates and require employers to offer exemptions for religious reasons, medical exemptions, COVID-19 immunity, regular testing or the usage of personal protective equipment (National Academy for State Health Policy, 2022).

4 Misinformation and Disinformation Surrounding Vaccination

Justice Antonin Scalia, writing for the United States Supreme Court in its seminal vaccine injury case, Bruesewitz v. Wyeth, noted that: "In the 1970's and 1980's vaccines became, one might say, victims of their own success. They had been so effective in preventing infectious diseases that the public became much less alarmed at the threat of those diseases, and much more concerned with the risk of injury from the vaccines themselves" (Bruesewitz v. Wyeth 562 U.S. 223, 226 (2011)).

Understanding the benefits and genuine risks of vaccination is essential to ensuring that individuals trust the vaccines that are developed and are willing to receive the vaccine. However, public trust of vaccines, and particularly the COVID-19 vaccine, have been tenuous in the last several years due to both disinformation and misinformation. Disinformation is the deliberate act of misleading through false, biased, or manipulated information (Citron, 2022), whereas, misinformation is false information that is spread without the intent to mislead (Citron, 2022). Misinformation about vaccines has existed since the invention of vaccination itself, with claims being made at the time that vaccines derived from animals would cause their recipients to develop animal-like characteristics (Abramson, 2022). In the modern era, robust efforts to disseminate misinformation can be traced back to the 1990s when British scientist Andrew Wakefield produced a study asserting a causal connection between the measles vaccine and autism (Davidson, 2017). At the time, the study was widely reported on by multiple news media outlets in the United States, but was later found to be invalidated by multiple subsequent studies (Davidson, 2017). Despite being disproved, this is still a barrier to vaccination efforts amongst families with autism. In 2016, Twitter accounts identified as Russian bots, seeking to exacerbate divisions in the American polity in the run-up to the presidential election that year, spread anti-vaccination propaganda as part of this effort (Howard, 2018). A 2018 study in the *American Journal of Public Health* identified specific messages such as one saying that "only the elites get clean vaccines," which differed from normal anti-vaccine rhetoric by implying that safe and effective vaccines were available, but that their distribution was merely limited by class (Broniatowski, 2018).

This activity was more calculated and more widespread than any previous anti-vaccine activity–so widespread that this messaging eventually circled back to Russia, where it proved effective in sowing distrust in vaccines and depressing vaccination rates.

5 Internationality as a barrier

Issues have also arisen specifically with respect to nonrecognition of certain vaccines by countries that are politically at odds with one another. For example, as of January 2022, the WHO has approved of ten COVID-19 vaccines (10 Vaccines Approved for Use by WHO (last updated 28 January 2022), https://covid19.trackvaccines.org/agency/who/), but the U.S. government has only authorized three of these for use in the United States.

In the midst of the pandemic, the U.S. recognized two Chinese-made vaccines as sufficient for international travel and immigration status in the U.S. based on their approval by the WHO, but has not recognized them as suitable for administration in the U.S. Conversely, China has not authorized the use of the mRNA vaccines authorized for use in the United States, for reasons analysts have deemed political and economic, rather than health policy-driven (Gan & George, 2021). The Russian-made Sputnik vaccine has not been recognized either by the WHO or by the U.S. For countries like Argentina, Pakistan, and the Philippines, where the Russian vaccine is more widely used, this also may pose problems for prospective travelers (Visram, 2021). Politically, the lack of recognition of all vaccines equally has caused world leaders from China and Russia to publicly complain about such recognitions during the G20 in 2021 creating additional and unnecessary controversy to the global vaccination conversation (Linge, 2021).

Indeed, one activity particularly ripe for the imposition of vaccination mandates is international travel. From an epidemiological standpoint, it makes sense to target the most likely locus of transmission of a disease into a country that has ostensibly low rates of that disease. From a practical standpoint, it is, politically, often much easier to impose a requirement on foreigners visiting from other countries than to impose such a requirement on one's own citizens. The question has been raised as to whether such requirements are discriminatory, given the paucity of access to vaccines in certain countries (Visram, 2021). Moreover, this lack of recognition of certain vaccines also poses larger concerns for global vaccination programs such as

COVAX. COVAX is the global collaboration program between governments, global health organizations, manufacturers, scientists, private sector, and civil society that is working to ensure dissemination and access to COVID-19 vaccines across the globe (Berkley, 2020). As part of supporting COVAX vaccination efforts, States have donated their vaccines to the COVAX program, however, due to the lack of recognition of certain vaccines, not all States' parties to the COVAX program are willing to accept all types of COVID-19 vaccines (Taylor, 2022).

6 Vaccine Injury Compensation Schemes: COVID-19 and Beyond

Globally, hundreds of millions of vaccines are administered each year almost always without injury. However, in a small number of cases individuals can have adverse reactions to vaccines. Thus, States have typically imposed vaccine injury compensation programs to ensure that individuals who are injured as a result of vaccination are compensated, and to promote vaccination amongst others. However, the approach for vaccine injury compensation program widely varies in application between states. For example, the United States processes vaccine injuries under the National Vaccine Injury Compensation Program ("NVICP"), which provides a list of covered vaccines and a specific list of recognized injuries that can result from vaccination which are both provided for in the Vaccine Injury Table ("VIT") (Abramson, 2022). In addition, under the United States NVICP a plaintiff can recover even if the injury they received is not listed on the VIT, so long as the vaccine is listed on the VIT (Abramson, 2022). However, while the United States vaccine injury compensation is robust, not all States have such an injury compensation program. A 2018 study by the WHO found that only nineteen States had vaccine injury compensation systems, and no such vaccine injury compensation programs were found WHO members in Latin America, or African and Eastern Mediterranean regions (WHO, 2019).

As a result of the inconsistency in the availability of vaccine injury compensation programs, the COVAX COVID-19 vaccination program has created a no-fault vaccine injury compensation mechanism for the COVID-19 vaccine. (WHO, 2021). The COVAX no-fault system covers "rare but serious adverse events associated with COVAX-distributed vaccines until 30 June 2022" (WHO, Feb. 2021). The creation of this global vaccine injury compensation program is intended to alleviate the burden on these claims on State courts and ensure a quick process for addressing any vaccine injury claims (WHO, Feb. 2021). Claims under the COVAC program

are limited serious adverse events to permanent impairments or death as a result of a COVAX administered vaccine received in a COVAX program state (COVAX, 2022). This limitation is important as this program is not intended to act as a global vaccine injury compensation program for all COVID-19 vaccines, but solely for the much smaller population of COVAX provided COVID-19 vaccines. Thus, for individuals in States that are not part of the COVAX program, they must file their COVID-19 related vaccine injury complaint with their relevant domestic office under their domestic laws and regulations.

7 Conclusion

While the global COVID-19 pandemic has brought vaccine law and vaccination mandates into the forefront of society's focus, the conversation will likely continue to remain prevalent in the years to come as the world continues to respond to the COVID-19 pandemic and prepares for future pandemics. Further, as States continue to navigate their COVID-19 response it will be essential for them to remember that while the COVID-19 virus was novel–vaccine law is not and has deep roots that can be traced back globally for decades. Moreover, as States begin to plan for future pandemics it will be important to recognize the role misinformation, disinformation, and vaccination mandates plays in this response and to determine where a State may need to domestically revise systems and laws for stronger public health responses.

References

Aavtisland, P., et al. (2021). Functioning of the International Health Regulations during the COVID-19 pandemic. *Lancet*, 398(10308), 1283-1287, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8497022/.

Abramson, B. D. (2022). *Vaccine, Vaccination, and Immunization Law,* 2nd ed. Bna Books.

Baumann, J. & Lopez, I. (2022, Mar. 1). Ukraine-Russia War Threatens to Stymie Covid Vaccination Efforts. *Bloomberg Law*. Retrieved from https://news.bloomberglaw.com/health-law-and-business/ukraine-russia-war-threatens-to-stymie-covid-vaccination-efforts (6 October 2022).

Berkley, S. (2020, Sept. 3). "COVAX explained". *Gavi The Vaccine Alliance*. Retrieved from: https://www.gavi.org/vaccineswork/covax-explained (Oct. 6, 2022).

Broniatowski, D. A., Jamison, A. M., Qi, S., AlKulaib, L., Chen, T., Benton, A., Quinn, SC & Dredze, M. (2018). Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate. *American Journal of Public Health*, 108, 1378-1384. doi: 10.2105/AJPH.2018.304567.

Browne, R. (2015, Feb 11). What Cuba can teach Canada about vaccines. *MacLeans*. Retrieved from https://www.macleans.ca/society/health/what-cuba-can-teach-canada-about-vaccines/ (Oct. 6, 2022).

Burgen, S. (2021, Jul 27). Exhibition tells story of Spanish children used as vaccine 'fridges' in 1803. *The Guardian*. Retrieved from https://www.theguardian.com/world/2021/jul/27/spanish-museum-celebrates-pioneer-who-took-smallpox-vaccine-to-colonies (Oct. 6, 2022).

CBS News (Jan. 23, 2017). What is the Mexico City Policy?, *CS News*. Retrieved from https://www.cbsnews.com/news/what-is-the-mexico-city-policy/ (Oct. 10, 2022).

Citron, D. (2022, Apr. 25). Fake News, Misinformation & Disinformation. *Campus library*. Retrieved from https://guides.lib.uw.edu/c.php?g=345925&p=7772376 (Oct. 6, 2022).

Chumachenko, D. & Chumachenko, T. (2022). Impact of war on the dynamics of COVID-19 in Ukraine, *BMJ Global Health*, retrieved from: https://reliefweb.int/report/ukraine/impact-war-dynamics-covid-19-ukraine (Mar. 25, 2022).

Clapp, J. D., Voas, R. B. & Lange, J. E. (2001). Cross-border college drinking. *Journal of Safety Research*, 32(3), 299-607. doi: 10.1016/S0022-4375(01)00052-4.

CMS (2021, Nov. 5). Medicare and Medicaid Programs; Omnibus COVID-19 Health Care Staff Vaccination, 86 FR 61555. Retrieved from https://www.federalregister.gov/documents/2021/11/05/2021-23831/medicare-and-medicaid-programs-omnibus-covid-19-health-care-staff-vaccination (Oct. 6, 2022).

Consulat General De France A Washington (2022, Jun. 6). Health pass: what to know if you are traveling to France. https://washington.consulfrance.org/health-pass-what-to-know-if-you-are-traveling-to-france (Oct. 6, 2022).

COVAX AMC (2022). Frequently Asked Questions (FAQs) Relating to the COVAX No-Fault Compensation Program for AMC Eligible Economies. Retrieved from https://covaxclaims.com/faqs/ (Oct. 6, 2022).

Coxe, J. R. (1802). *Practical Observations on Vaccination, Or Inoculation for the Cow-pock*. Philadelphia: Printed and sold by James Humphreys.

Cunningham, E. & Noack, R. (2021, Jul. 13). France and Greece mandate vaccinations for health workers amid delta variant surge, *The Washington Post*. Retrieved from https://www.washingtonpost.com/world/2021/07/13/coronavirus-latest-updates (Oct. 6, 2022).

Davidson, M. (2017). Vaccination as a cause of autism–myths and controversies, *Dialogues in Clinical Neuroscience*. 19(4). doi: 10.31887/DCNS.2017.19.4/mdavidson.

Dwivedi, S. (2022, May 2). No One Can Be Forced to Get Vaccinated': Supreme Court's Big Order, *NDTV*. Retrieved from https://www.ndtv.com/india-news/coronavirus-no-one-can-be-forced-to-get-vaccinated-says-supreme-court-adds-current-vaccine-policy-cant-be-said-to-be-unreasonable-2938319 (Oct. 6, 2022).

Eder, M. (2022, Jan. 16). Austria to Start Fines for Unvaccinated in March, Nehammer Says, *Bloomberg*. Retrieved from https://www.bloomberg.com/news/articles/2022-01-16/austria-to-start-fines-for-unvaccinated-in-march-nehammer-says (Oct. 6, 2022).

Enami, T. & Otsubo, H. (2010). The Current State of Immunization Administration in Japan, *JMAJ* 53(2), 111-117. Retrieved from https://www.med.or.jp/english/journal/pdf/2010_02/111_117.pdf (Feb. 25, 2022).

France24, (2022, Jan 17). Health pass becomes 'vaccine pass': Details of France' tough new Anti-pandemic bill. *France24*. Retrieved from https://www.france24.com/en/france/20220117-health-pass-becomes-vaccine-pass-details-of-france-s-tough-new-anti-pandemic-bill (Jun. 26, 2022).

Froger-Michon, C. & Bénistan, M. (2021, Sep. 29). Covid-19: Can employers impose vaccination on employees?. *CMS Law-Now*. Retrieved from https://www.cms-lawnow.com/ealerts/2021/09/covid-19-can-employers-impose-vaccination-on-employees (Oct. 6, 2022).

Gan, N. & George, S. (2021). China was ready to approve Western mRNA vaccines months ago. Why is it still holding off?, *CNN*. Retrieved from: https://www.cnn.com/2021/12/13/china/china-western-mrna-vaccine-mic-intl-hnk/index.html (Dec. 13, 2021).

GOV.UK (May 22, 2022). Using the NHS COVID Pass to demonstrate COVID-19 status. *GOV.UK*. Retrieved from https://www.gov.uk/guidance/nhs-covid-pass (Oct. 10, 2022).

Haverkate, M. R. et al. (2012). Mandatory and recommended vaccination in the EU, Iceland and Norway: results of the VENICE 2010 survey on the ways of implementing national vaccination programmes. *Eurosurveillance,* 17(2). Retrieved from http://eurosurveillance.org/content/10.2807/ese.17.22.20183-en (Oct. 6, 2022).

Howard, J. (2018, Aug 24). Why Russian trolls stoked US vaccine debates, *CNN*. Retrieved from https://www.cnn.com/2018/08/23/health/russia-trolls-vaccine-debate-study/index.html (Oct. 6, 2022).

Krauth, C. & Pérez, G. A. (2022). Argentina. In: Abramson, B. D. *Vaccine, Vaccination, and Immunization Law,* 2nd ed. Bna Books.

Kuwabara, N. (2021). A Review of Factors Affecting Vaccine Preventable Disease in Japan. *Hawaii Journal of Medicine & Public Health*, 73(12), 376-381. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4300546 (Feb. 25, 2022).

Lee, Ye He M. (2017, Jan. 26). Does Trump's Mexico City policy ban funds to groups that 'even mention' abortion?". *Washington post*. Retrieved from https://www.washingtonpost.com/news/fact-checker/wp/2017/01/26/does-trumps-mexico-city-policy-ban-funds-to-groups-that-even-mention-abortion/ (Oct. 6, 2022).

Ledsom, A. (2022, Jan. 17). French Covid Vaccine Pass Becomes Law: What This Means for Travel Plans". *Forbes*. Retrieved from https://www.forbes.com/sites/alexledsom/2022/01/17/french-covid-vaccine-becomes-law-what-this-means-for-travel-plans/?sh=1dcbf54234a1 (Oct. 6, 2022).

Linge, M. K. (2021, Oct. 21). Xi, Putin push G20 nations to recognize their COVID-19 vaccines, *New York Post*. Retrieved from https://nypost.com/2021/10/30/xi-putin-push-g20-nations-to-recognize-their-covid-19-vaccines/ (Oct. 6, 2022).

Martha, R. & Bailey, S. (2020, Jun. 23). The right to enter his or her own country, *EJIL: Talk! Blog of the European Journal of International Law*. Retrieved from https://www.ejiltalk.org/the-right-to-enter-his-or-her-own-country/ (Jun. 14, 2022).

Matějovský, T., Drimalova, A., Kabát, J., Szpyrc, D. & Turečková, J. (2021, Sep. 13). Can vaccination be a condition for workplace access in the Czech Republic?. *CMS-Law Now*. Retrieved from https://www.cms-lawnow.com/ealerts/2021/09/can-vaccinations-be-a-condition-for-workplace-access-in-the-czech-republic (Oct. 6, 2022).

Meredith, S. (2022, Jan. 13). Why Cuba's extraordinary Covid vaccine success could provide the best hope for low-income countries, *CNBC*. Retrieved from https://www.cnbc.com/2022/01/13/why-cubas-extraordinary-covid-vaccine-success-could-provide-the-best-hope-for-the-global-south.html (Oct. 6, 2022).

Mills, M. C. & Rüttenauer, T. (2022). The Effect of Mandatory COVID-19 Certificates on Vaccine Uptake: Synthetic-Control Modelling of Six Countries, *The Lancet*, 7(1), e15-e22. doi: 10.1016/S2468-2667(21)00273-5 (Oct. 6, 2022).

Nascimento de Oliveira, L., da Silva, S., Vitor, F. & Stephano, M. A. (2001) Pharmaceutical Quality System for Biotechnology Products. In: Pessoa, A., Vitolo, M. & Long, P. F. (eds.), *Pharmaceutical Biotechnology: A Focus on Industrial Application*. CRC Press.

National Academy for State Health Policy, (2022, Jun. 10). State Efforts to Ban or Enforce COVID-19 Vaccine mandates and Passports. Retrieved from https://www.nashp.org/state-lawmakers-submit-bills-to-ban-employer-vaccine-mandates/ (Oct. 12, 2022).

Nguyen, H. H. (2021, Sep. 24) China Courts Vietnam with More COVID-19 Vaccines, Mistrust Remains. *The Diplomat*. Retrieved from https://thediplomat.com/2021/09/china-courts-vietnam-with-more-covid-19-vaccines-mistrust-remains/ (Oct. 6, 2022).

Normile, D. (2019, Mar. 27). Japanese court rules against journalist in HPV vaccine defamation case. *Science Magazine*. Retrieved from https://www.sciencemag.org/news/2019/03/japanese-court-rules-against-journalist-hpv-vaccine-defamation-case (Oct. 6, 2022).

O'Connor, T. (2021, Oct. 5). As Vaccine Mandates Face Resistance in U.S., Cuba Says It Doesn't Need Them, *Newsweek*. Retrieved from https://www.newsweek.com/vaccine-mandates-face-us-resistance-cuba-doesnt-need-1635437 (Oct. 6, 2022).

Oltermann, P. (2022, Feb. 4). Austria passes Covid vaccine mandate, but question marks linger over enforcement, *The Guardian*. Retrieved from

https://www.theguardian.com/world/2022/feb/04/austria-passes-covid-vaccine-mandate-but-question-marks-linger-over-enforcement (Oct. 6, 2022).

Reed, G. & Galindo, M. A. (2007). Cuba's National Immunization Program. *MEDICC Review*, 9(1), 5-7. doi: 10.37757/MR2007V9.N1.2.

Reuters (2022, Jun. 19). COVID-19 Tracker Russia, Retrieved from https://graphics.reuters.com/world-coronavirus-tracker-and-maps/countries-and-territories/russia/ (Oct. 6, 2022).

Schengen Visa News, Austria: Mandatory COVID-19 Vaccination Law Gets Suspended (March 10, 2022). Retrieved from https://www.schengenvisainfo.com/news/austria-mandatory-covid-19-vaccination-law-gets-suspended/ (Oct. 6, 2022).

Schlein, L. (2022, Apr. 27). WHO: War Interrupts Routine Lifesaving Immunizations in Ukraine. *VOA*. Retrieved from https://www.voanews.com/a/who-war-interrupts-routine-lifesaving-immunizations-in-ukraine/6547218.html (Oct. 6, 2022).

Sohn, M. et al. (2021). The Problems of International Health Regulations (IHR) in the process of responding to COVID-19 and improvement measures to improve its effectiveness, J. *Glob. Health Sci*., 3(2).

Stark Čorba, P. & Kundrik, P. (2021, Sep. 9). Slovakia's labour inspectorate issues interpretation on vaccination of employees, *CMS Law-Now*. Retrieved from https://www.cms-lawnow.com/ealerts/2021/09/slovakias-labour-inspectorate-issues-interpretation-on-vaccination-of-employees/ (Oct. 6, 2022).

Stronski, P. (2021, Nov. 15). What Went Wrong with Russia's Sputnik V Vaccine Rollout, *Carnegie Endowment for International Peace*. Retrieved from https://carnegieendowment.org/2021/11/15/what-went-wrong-with-russia-s-sputnik-v-vaccine-rollout-pub-85783 (Oct. 6, 2022).

Taylor, A. (2022, Jan. 11). Beijing and Moscow are losing the vaccine diplomacy battle, *The Washington Post*. Retrieved from https://www.washingtonpost.com/world/2022/01/11/china-russia-omicron-vaccine/ (Oct. 6, 2022).

United Nations (2021, Jul. 12) WHO: Mandatory vaccinations are a last resort, *United nations in Western Europe*. Retrieved from https://unric.org/en/who-mandatory-vaccinations-are-a-last-resort/ (Oct. 6, 2022).

van der Meulen Rodgers, Y. (2019). *The Global Gag Rule and Women's Reproductive Health: Rhetoric Versus Reality*. Oxford, New York: Oxford University Press.

Vinceti, S. R. (2021). COVID-19 Compulsory Vaccination and the European Court of Human Rights, *Acta Biomedica*, 92(S6), e2021472. Retrieved from https://pubmed.ncbi.nlm.nih.gov/34739454/ (6 October 2022). doi: 10.23750/abm.v92iS6.12333.

Visram, T. (2021, Dec. 13). The developing world can't access vaccines: Is it ethical to mandate them for international travel?. *Fast Company*. Retrieved from https://www.fastcompany.com/90704710/the-developing-world-cant-access-vaccines-is-it-ethical-to-mandate-them-for-international-travel (Oct. 6, 2022).

Walkinshaw, E. (2011). Mandatory vaccinations: The international landscape. *Canadian Medical Association Journal* 183(16), e1167–e1168. doi: 10.1503/cmaj.109-3993

WHO (2019, Jan. 25). WHO, "Injury Compensation", *WHO*. Retrieved from https://www.who.int/groups/global-advisory-committee-on-vaccine-safety/topics/pharmacovigilance/injury-compensation (Oct. 6, 2022).

WHO (2021, Feb. 21). WHO, "No-fault compensation programme for COVID-19 vaccines is a world first", *WHO*. Retrieved from https://www.who.int/news/item/22-02-2021-no-fault-compensation-programme-for-covid-19-vaccines-is-a-world-first#:~:text=As%20the%20first%20and%20only,adverse%20events%20associated%20with%20COVAX%2D (Oct. 6, 2022).

WHO (2021, Jul. 12). Mandatory vaccinations are a last resort *WHO*. Retrieved from https://unric.org/en/who-mandatory-vaccinations-are-a-last-resort/ (Oct. 6, 2022).

WHO (2021, Dec. 1). World Health Assembly agrees to launch process to develop historic global accord on pandemic prevention, preparedness and response. *WHO*. Retrieved from:

https://www.who.int/news/item/01-12-2021-world-health-assembly-agrees-to-launch-process-to-develop-historic-global-accord-on-pandemic-prevention-preparedness-and-response (Oct. 6, 2022).

WTO (2022). Overview: the TRIPS Agreement. Retrieved from https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm (Jun. 14, 2022).

Yu, J. & Hua, A. (2021, Jan. 21). What the employers should/can do on COVID-19 vaccination?. *CMS Law-Now*. Retrieved from https://www.cms-lawnow.com/ealerts/2021/01/what-the-employers-should-can-do-on-covid-19-vaccination (Oct. 6, 2022).

Zaini, K. & Thi Ha, H. (Sept. 1, 2021). Understanding the Selective Hesitancy towards Chinese Vaccines in Southeast Asia, *Yusof Ishak Institute* No. 115, https://www.iseas.edu.sg/wp-content/uploads/2021/08/ISEAS_Perspective_2021_115.pdf. (Sep. 23, 2022).