



COMMENT



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Learning from the past and present: social science implications for COVID-19 immunity-based documentation

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In responding to the widespread impacts of the COVID-19 pandemic, countries have proposed and implemented documentation policies that confer varying levels of freedoms or restrictions (e.g., ability to travel) based on individuals' infection status or potential immunity. Most discussions around immunity- or infection-based documentation policies have focused on scientific plausibility, economic benefit, and challenges relating to ethics and equity. As COVID-19 vaccines are rolled out, attention has turned to confirmation of immunity and how documentation such as vaccine certificates or immunity passports can be implemented. However, the contextual inequities and local variabilities interacting with COVID-19 related documentation policies hinder a one-size-fits-all approach. In this Comment, we argue that social science perspectives can and should provide additional insight into these issues, through a diverse range of current and historical examples. This would enable policymakers and researchers to better understand and mitigate current and longer-term differential impacts of COVID-19 immunity-based documentation policies in different contexts. Furthermore, social science research methods can uniquely provide feedback to inform adjustments to policy implementation in real-time and help to document how these policy measures are felt differently across communities, populations, and countries, potentially for years to come. This Comment, updated as of 15 August 2021, combines precedents established in historical disease outbreaks and current experiences with COVID-19 immunity-based documentation policies to highlight valuable lessons and an acute need for further social science research which should inform effective and context-appropriate future public health policy and action.

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Introduction

COVID-19 related documentation such as passports, certificates, and licences have been subject to increasing discussion throughout the pandemic (Organization, 2020b). In various contexts, this documentation implies different rights, restrictions, and/or freedoms, based on presumed immunity- or infection-based criteria. Furthermore, these policies have implications at both the domestic and international levels (The Lancet Microbe, 2021). For example, COVID-19 policies implemented early in Denmark and India (and now used by many countries) focus on proving freedom from current infection (Drury, 2020; 2020b), and in El Salvador and Brazil certify an individual's recovery from infection (Phillips, 2020; 2020a). Initially this was to prevent transmission from areas of high burden to those with lower burden of infection; however recently the focus has switched to preventing introduction of new variants of the SARS-CoV-2 (Callaway, 2021). As COVID-19 vaccines were rolled out, attention turned to confirmation of immunity. Many of the same questions and concerns are being raised, and the term 'immunity passport' is being applied to potential policies based on vaccination status documentation, such as the European Union's Digital COVID Certificate rolling out in July 2021 (Picard, 2020; 2021c; Gostin et al., 2021). There is therefore a continued need to consider the debates over the last year around 'immunity passports' in the context of vaccination, and what these discussions reveal about the kinds of research and voices needed to better inform policy actions.

Immunity-based documentation is not a new practice in global health governance; today its most recognisable implementation is the yellow fever vaccination certificates required for travel to or from various countries (World Health Organization, 2015). To date, most discussions around immunity-based documentation for COVID-19 have focused on scientific soundness, economic benefit, and ethical challenges of implementation whilst drawing on a narrow selection of historical examples (Persad and Emanuel, 2020; Voo et al., 2020; Phelan, 2020; Voo et al., 2021). Although important contributions, these perspectives miss the real human lives, day-to-day experiences, and 'messy middle-grounds' that underpin them. Here, we argue that discussions around COVID-19 immunity-based documentation should include greater input from humanities and social sciences such as sociology, anthropology, and history to better understand the immediate, short- and long-term impacts of such policies. Through using diverse current and historical examples, we suggest increased attention to the role of context in particular. Greater social science input into health policy decision-making in pandemic preparedness and response adds further richness to understandings of these issues, and the lives and realities with which they are intertwined, and is essential to inform effective health policies and implementation. To this end, we need social science research investigating the impact and experience of immunity-based documentation policies when and where they unfold.

What is immunity, how is it being measured, and what does it mean?

The approaches being considered for confirming immunity to SARS-CoV-2 focus on different aspects of infection, immunity, and transmission. Options vary regarding what they indicate about the virus and immune response, and therefore have different implications when resulting in a positive or negative test. Table 1 summarises the biomedical and epidemiological rationale and pitfalls of these approaches, refers to parallels from other infectious diseases, and raises potential accessibility and equity implications, which have been the focus of recent debate

regarding vaccination. The International Health Regulations, which are drawn up through international consensus for infections such as yellow fever, do not yet govern travel based on vaccination for COVID-19, thus resulting in heterogeneity of approaches between countries (Ferhani and Rushton, 2020; World Health Organization, 2021). For example, there are concerns about lack of coordination and transparency of restrictions to inter-country travel.

The World Health Organization's Director-General has warned world leaders of significant inequity of access to vaccines (World Health Organization, 2021), asking that the COVAX initiative, set up to improve global access to COVID-19 vaccines, not be undermined (Public Health England, 2020). This inequity in vaccine distribution and its implications for vaccination coverage in low and middle-income countries, is further manifested by current COVID-related documentation policies that limit which vaccinations will be accepted by the schemes (Borana, 2021). For example, while India's Serum Institute manufactures the Oxford-AstraZeneca vaccine under a different name, Covishield, it is currently not approved by the European Medicines Agency and therefore not accepted in the EU digital COVID certificate scheme (Borana, 2021). A number of additional COVID-19 vaccines have been produced (for example, in Russia and in China) and more are vying for WHO approval status for emergency use.

The implementation of immunity-based documentation to grant various freedoms to individuals also raises questions about the implications this has for assumed mandatory vaccination and if and how exemptions will be considered. Further, given uncertainty regarding the length of immunity conferred by infection and/or vaccination, protocols for re-issuing immunity-based documentation for the same individual must also be considered. Bringing conversations around vaccination and immunity-based documentation together, the final column in Table 1 suggests related potential priority areas that social science research could help to address, drawing on a crowd-sourced document of medical anthropological research questions (Nichter et al., 2020).

Historical precedents

As variants of COVID-19 emerge, past experience with other infectious diseases has been one important source of information to guide current action. As multiple commentators highlight, immunity-based documentation policies that allow freedoms to certain populations while restricting others' may result in people seeking infection in order to access these freedoms as well (Phelan, 2020). Such commentaries have frequently pointed to two cautionary historical precedents of intentional infection: yellow fever in the US antebellum South and 'chicken pox parties' in the twentieth century. It is important to consider that whilst intentional infection may be encouraged by policies and documentation requiring proof of infection (e.g., 'immunity' passports), policies and documentation requiring proof of vaccination rather incentivise seeking vaccination (e.g., 'vaccine' passports) (Osama et al., 2021). However, the pursuit of intentional infection may remain a risk in the COVID-19 pandemic where access to vaccines is lacking. While seeking 'natural immunity' may be prioritised as a lifestyle choice in the global north, it may be the only option in many countries around the world with limited vaccine availability. Policymakers must consider how to safeguard against these activities while also balancing the pressure to construct a coherent 'success story' that may skew the apparent cost and benefit of an immunity-based documentation policy (Das, 1999).

Table 1 Current and proposed approaches to documenting freedom from infection with or immunity to SARS-CoV-2.

Approach	Rationale	COVID-19 examples	Comparative examples	Biomedical & epidemiological pitfalls	Accessibility	Equity implications	Social science research questions
Proof of vaccination	An effective vaccine could prevent onward transmission by an individual.	The UK is encouraging the G7 to adopt an international vaccine passport system (Lawless, 2021). Limited travel between New Zealand and Australia on Air New Zealand trialling the new Travel Pass mobile app which includes proof of vaccination (2021a). Japan is allowing 'vaccine passports' from 10 countries, which would exempt travellers from quarantine or the need to show a negative test result on arrival (2021f). The EU Digital COVID Certificate and Israel's Green Pass are used to verify an individual has been vaccinated, tested negative, or recently recovered from COVID-19 (2021i; Holmes and Kierszenbaum, 2021; Staf, 2021). These systems are also being used in several countries to regulate entry to public places such as large events, museums, gyms, and restaurants (2021d). Negative PCR tests are required for entry in a wide range of countries, which as of 14 August 2021 includes (in some of these cases, proof of vaccination is accepted in tandem or in lieu of a test): Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Slovakia, Spain, Sweden, Turkey, UK, Japan, South Korea, Vietnam, Singapore, China, Indonesia.	Yellow fever vaccination to allow international travel (Stan ding Recommendation under IHR) (Chen and Wilson, 2020; World Health Organization, 2021). Polio vaccination to allow international travel (Temporary Recommendation under IHR).	Initial vaccines are likely to have uncertain effectiveness for subgroups of the population and take time to achieve herd immunity (Kahn et al., 2018). Duration of protection will be uncertain until longer-term follow-up results are available.	Vaccines are being rolled out in multiple countries, with most prioritising health workers and older people. An international consortium, COVAX, has proposed a centralised approach to equitable distribution, though there are early concerns about achieving this (World Health Organization, 2020a).	Availability may be influenced by geographical factors: WHO has warned against unequal distribution through higher-income countries overwhelming manufacturing capacity. Population subgroups at highest risk of infection or severe disease may not be included in trials, which do not take equity gaps into account, meaning actual protection may be uncertain for these groups (Bosch-Capblanch et al., 2017).	How do different communication strategies relate to uptake of COVID-19 vaccines? How can harder to reach groups access the vaccine? How can diverse stakeholders become involved with the development of implementation strategies? How can barriers and facilitators to implementation be incorporated into these policies? How can representation of all sections of the global population be achieved in clinical trials? How do people who receive vaccinations perceive their risk of infection or ability to transmit the virus to others?
Recent negative PCR test in individual without symptoms of COVID-19	An individual with no symptoms is less likely to cough and sneeze (probably responsible for transmission) (World Health Organization, 2020c).		Normal chest X-ray or negative skin/blood test for latent tuberculosis screening prior to travel or migration (Dobler et al., 2018).	Transmission in absence of symptoms (Wu et al., 2020). False negative PCR tests for variety of reasons (Gandhi et al., 2020; Wiersinga et al., 2020). Highest likelihood of transmission soon after symptom onset (amount of virus in the throat peaks just before symptoms appear) (Wills, 2020), and incubation period (time from infection to symptoms) is 5 days on average (Wiersinga et al., 2020), so results may not be valid for long.	Capacity for PCR testing is increasing globally, but constraints remain, with prioritisation for diagnosis in those with symptoms (NSW Health Pathology and Office of the Chief Health Officer, 2020). May be expensive for those accessing tests via private laboratories.	Due to short duration of validity, repeated tests may be required. With tests in short supply, and likely to be chargeable and expensive if for individual and not public health reasons, they may be limited to individuals, companies, and countries with higher incomes.	How can access to tests for documentation purposes be made equitable? What pricing and licensing strategies might encourage best practice in providing such tests in the private sector? How is testing being received and accommodated (or not) in the community, for those with and without symptoms? How does testing fit into daily life for different groups and individuals? E.g., modification of rituals and ceremonies, fraud, fear, rumours, conspiracy theories? How is testing being communicated and explained to different parts of the community? How are individuals and groups making decisions about getting tested?

Table 1 (continued)

Approach	Rationale	COVID-19 examples	Comparative examples	Biomedical & epidemiological pitfalls	Accessibility	Equity implications	Social science research questions
Negative rapid antigen test for current infection	A rapid antigen test would have less delay (i.e., within 30 min) and may be used in conjunction with other approaches, such as proof of vaccination (Centres for Disease Control and Prevention, 2021).	Malaysia, United Arab Emirates, Bahrain, Brunei, Cambodia, Iraq, Israel, Kazakhstan, Lebanon, Maldives, Nepal, Philippines, Sri Lanka, Thailand, Angola, Benin, Cameroon, Cape Verde, Chad, Djibouti, Egypt, Equatorial Guinea, Ghana, Guinea, Kenya, Liberia, Mali, Morocco, Namibia, Democratic Republic of the Congo, Republic of the Congo, Rwanda, Sierra Leone, Somalia, South Africa, Togo, Tunisia, Uganda, Zambia, Guam, USA, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, Sint Eustatius and Saba, Costa Rica, Dominican Republic, Greenland, Jamaica, Panama, Puerto Rico, Argentina, Bolivia, Colombia, Ecuador, Peru (2021b). Multiple examples have been implemented including large events such as the Tokyo Olympics (daily testing for athletes) (Wansley, 2021) and Canada's Calgary Stampede (testing required for entry), workplaces (Galea, 2021; López Seguí et al., 2021); travel into some countries (e.g., Greece).	The duration of immunity following infection is unclear, and appears variable (Mahase, 2020). Asymptomatic infection is common, and would be missed by such an approach (Wu et al., 2020). Symptoms can be prolonged, whereas transmission is not as long (Greenhalgh et al., 2020).	A rapid antigen test is less sensitive than PCR and other nucleic acid amplification tests (NAATs) (Centres for Disease Control and Prevention, 2021; Crozier et al., 2021). There are concerns over accuracy of the various tests in terms of false negative results, especially when administered by laypersons rather than lab scientists (Smout, 2021; Grover and Allegretti, 2021; Crozier et al., 2021; 2021e). Now likely to be most widely accessible: in many countries, for people who test positive initially, ensuring a negative test is a priority for discontinuing isolation precautions. Testing capacity was lower earlier in the pandemic, and overwhelmed during surges, so many people may have missed the opportunity to meet these criteria.	These tests are typically cheaper than PCR tests and do not require a laboratory.	Access to such testing in rural/remote communities might be less rapid. May repeatedly disadvantage those who are more at risk of infection.	How does rapid antigen testing fit into everyday lives? How does acceptance of testing differ depending on the context or purpose (e.g., travel vs. work)? How does this testing impact social relations?
An individual with resolved infection is likely to be immune and therefore unlikely to transmit the virus.	Travel to the USA is allowed in the three months following infection, with documentation of the positive initial PCR test result and of clearance to travel from a health professional (2021g). A positive PCR test from more than 20 days ago allows entry to Fernando do Noronha, a Brazilian island	Negative PCR test after initial infection with or antiviral treatment for hepatitis C infection to allow work in some healthcare settings (Public Health England, 2019).	The duration of immunity following infection is unclear, and appears variable (Mahase, 2020). Asymptomatic infection is common, and would be missed by such an approach (Wu et al., 2020). Symptoms can be prolonged, whereas transmission is not as long (Greenhalgh et al., 2020).	Now likely to be most widely accessible: in many countries, for people who test positive initially, ensuring a negative test is a priority for discontinuing isolation precautions. Testing capacity was lower earlier in the pandemic, and overwhelmed during surges, so many people may have missed the opportunity to meet these criteria.	May increase demand for limited testing capacity. People with resolved initial infection but prolonged recovery or long-term complications are less likely to be able to work. Those most vulnerable economically will be most likely to try to acquire infection to be able to work, but the disease has been shown to be most severe in	How does policy and messaging influence risk-taking behaviour to do with acquisition of SARS-CoV-2? Whilst requiring immunity passports (based on proof of infection) may encourage intentional infection, vaccine passports (based on proof of vaccination) encourages these practices and incentives interact and unfold in different contexts? How might	How does policy and messaging influence risk-taking behaviour to do with acquisition of SARS-CoV-2? Whilst requiring immunity passports (based on proof of infection) may encourage intentional infection, vaccine passports (based on proof of vaccination) encourages these practices and incentives interact and unfold in different contexts? How might

Table 1 (continued)

Approach	Rationale	COVID-19 examples	Comparative examples	Biomedical & epidemiological pitfalls	Accessibility	Equity implications	Social science research questions
Positive antibody test	<p>Presence of antibodies implies immunity against infection, and therefore prevention of transmission. This may pick up people who did not have a positive PCR test at the time of infection (Wu et al., 2020).</p>	<p>A positive antibody test in the absence of symptoms, enables travel to Fernando do Noronha, a Brazilian island (Wenzel and Pedrosa, 2020).</p>	<p>Positive surface antibody against hepatitis B to allow certain types of healthcare work (Public Health England, 2019).</p>	<p>If tested more than a few days after onset of symptoms, or more than a week after becoming infected, a positive result may be due to current infection, and therefore may imply current transmission risk (Deeks et al., 2020). Test accuracy varies according to which test is used and the prevalence of SARS-Cov-2 immunity in the population (Centres for Disease Control and Prevention; 2020; Voo et al., 2020). Production of antibodies following infection appears to be variable in terms of amount and duration (Quan-Xin et al., 2020). It is unclear how much antibodies vs. T-cells contribute towards immunity (Altman and Boyton, 2020).</p>	<p>disadvantaged areas (Public Health England, 2020). Those unable to access testing are unlikely to be captured this way.</p> <p>Accessibility depends on national approach to antibody testing. If not available freely, likely to be expensive (though cheaper than PCR tests), or may only be available through participation in research studies (using tests whose accuracy is still being assessed).</p>	<p>this impact public health communication(s)/ messaging? What are the impacts of being identified as being infected with the virus, and possibly having transmitted it to others (e.g., shame, guilt, blame, stigma)? Younger people with mild (or asymptomatic) disease are less likely to have detectable antibodies after infection (Stames et al., 2021), yet are more likely to need to resume work or travel soon after clearing infection (due to having dependents, for example). Immunocompromised people may also not produce detectable antibodies after either infection or vaccination. This group (e.g. people with autoimmune disorders or taking immunosuppressive medications) were excluded from the original vaccine trials, yet are precisely the people at high risk of severe COVID-19 outcomes (Sonani et al., 2021).</p>	<p>Who is being offered these tests, and under what circumstances? How are these tests being used, and how are they being explained to the public? How is risk perception affected by a positive antibody test? How does this affect their behaviour and practices? Are 'pervasive incentives' actually playing out in terms of people deliberately exposing themselves to infection, and if so, under what conditions?</p>

However, other precedents and models should also inform our approaches to COVID-19, especially as we consider the range of policies being used or proposed. For instance, a recent negative swab PCR test prior to travel is either required for individuals to enter or may remove/reduce the duration of quarantine on arrival in many countries; however, this practice does not govern the process for acquiring that test, which might be prone to differential ease of access (Drury, 2020; 2020b). Drawing from previous examples in history, a system of physician-certified immunity was implemented in Gibraltar in 1828 for yellow fever, possibly the earliest surviving example of such passes (Sawchuk and Tripp, 2021). Almost a century later, the use of health certificates was adopted by various city health departments and the state of New York during the 1916 polio epidemic in the Northeastern United States. However, a health certificate from a private physician was not enough to certify a child ‘free of infection,’ on the basis that they could not be trusted to put the good of the community ahead of their patients’ convenience (Rogers, 1986). Even with an official health certificate in hand, New York children were therefore frequently refused entry to nearby towns or threatened with quarantines as long as four weeks (Rogers, 1986). In the current case, variations in COVID-19 restriction policies and testing requirements for travel have led to private providers meeting the demands for PCR tests, raising potential issues around equity and access to testing. This profiteering extends to recent reports of selling fraudulent COVID-19 test results, which has led to suggestions that traditional paper-based certification is not trustworthy (Ellyatt, 2021; Werthmuller, 2021).

As another example of the pitfalls of such testing, mandatory intermittent testing of sex workers for HIV and other sexually transmitted infections has been argued to be an ineffective use of funds and to confer a false sense of security, in part due to the ‘window periods’ during which infections may go undetected (Jeffreys et al., 2012). Similar concerns have been raised in regards to SARS-Cov-2 PCR tests; COVID-19 has an average incubation (‘window’) period of around five days after exposure to the virus, during which PCR tests are usually negative (Böger et al., 2021). Furthermore, there is potential danger for the certificate itself to become the focus and goal of these clinical interactions, rather than the health of the individual or wider community (Jeffreys et al., 2012). This potentially increases the likelihood of fraud and may impact the ability to access testing for symptomatic individuals, due to unclear priorities for resource allocation (Jeffreys et al., 2012). For COVID-19, it may matter who does the testing and issues documentation, and if they are seen as impartial, reliable, and trustworthy. Further, profitable pre-travel testing in some contexts may lead to the diversion of private laboratory resources potentially away from local health priorities.

With various vaccines in the pipeline, and vaccination programmes already beginning in many countries, we must again learn from history to ensure equitable access to the immunity they provide and the associated documentation. During the 1913 smallpox epidemic in New Zealand, successful vaccination enabled Māori to obtain a certificate for exemption from travel restrictions. However, travel to a town or city for the vaccine itself was possible only with documentation of previous vaccination, which many Māori did not have, creating a catch-22 that further entrenched existing disparities (Day, 1998). Despite Māori being most at risk in this epidemic, they had the most difficulty obtaining vaccines, as European New Zealanders prioritised their own protection (Day, 1998). With COVID-19, establishing equitable allocation and access to approved vaccines is a challenge. The COVAX initiative relies on global solidarity to finance and distribute the needed vaccines (Herzog et al., 2021). However equitable access to COVID-19 vaccines for global populations requires not only fair allocation of the vaccine but also systems in

place to produce and deploy affordable vaccines at scale as well as mechanisms to promote vaccine acceptance (Herzog et al., 2021; Wouters et al., 2021).

Immunity-mediated certification has been used historically, and will likely be used again in future epidemic or crises settings. In the development and implementation of national and international COVID-19 related documentation measures, we must consider diverse historical precedents for immunity-based privileges, current scientific knowledge around COVID-19 immunity and testing, and the local context and implications of these policies. COVID-19 related documentation is a space characterised by significant uncertainty. While immunity from previous infection and potential for transmission after inoculation with a vaccine remain unclear (Peiris and Leung, 2020), a focus on the presence or absence of the virus itself is a narrow way to define health and wellbeing. Further, human biology cannot be assumed to look and work the same way across populations, space, and time. Researchers, advisors, and policymakers must learn from diverse cases in order to produce health policies that can work for different people on the ground.

The importance of context

When considering contextual factors that shape and are shaped by COVID-19 related documentation in practice, social science perspectives, methods, and theory are particularly valuable. Calls for increased engagement with social science methods and theory in implementation science emphasise that: ‘It is not enough to know if a health intervention is effective; it is also necessary to understand why the intervention works, how, for whom and in which contexts’ (Ridde, 2016). In terms of COVID-19, the reception of introducing and implementing documentation policies is influenced by the societal norms and expectations in the local context. For example, Israel, a country with compulsory national identity card regulations was one of the first nations to introduce the Green Pass (2021i). Meanwhile, such documentation policies have been largely criticised by lawmakers and the public in Ireland, the United Kingdom, and the United States—nations without compulsory identity cards (Allegretti, 2021). Furthermore, a recent study analysing religious opposition to vaccination in the UK and Israel highlights how politicising discourses of ‘beliefs’ and ‘hesitancy’ frame religion and culture as obstacles to the intervention, whilst often obscuring and delegitimising the situated, structural, and wider contextual issues that crucially inform individuals’ decisions and concerns about biomedical technology, its production, and how it is governed (Kasstan, 2021).

There are many different social science models and understandings of context, yet a key part of many of these is an appreciation of complexity and interaction of dynamic multi-level processes (Greenhalgh et al., 2017; May and Finch, 2009). Social science literature on implementation, discussing how health policies and guidelines unfold and are done in practice, highlights that this is not a straightforward undertaking that happens the same way everywhere for everyone (Greenhalgh et al., 2017; May and Finch, 2009; Ridde, 2016; Van Belle et al., 2017). However, more positivist accounts discuss ‘following’ or ‘adhering’ to health policies or guidelines, implying a linear process echoing the logic of determinism (Durlak and Dupre, 2008; Fischer et al., 2016). These accounts frame contextual realities through the lens of ‘barriers’ and ‘facilitators’ to effective implementation—rather than incorporating these considerations into policy and guideline development to better accommodate and reflect them.

Ethical and biomedical lenses have dominated discussions of COVID-19 related documentation, focusing on universal principles that should guide implementation (or not) (Brown et al.,

2020; Kofler and Baylis, 2020; Voo et al., 2020). Here, some of the social determinants of health are considered in questions of equity, stigma, and access. While these perspectives are essential, they are incomplete. They should also be complemented by further social science research into local realities and experiences that reveal how such policies become situated in lived context for individuals and whole groups, as illustrated by the historical examples above. A recent rapid review of public attitudes and behavioural responses towards COVID-status certification found that their conclusions about people's underlying reasoning were limited by the quality and quantity of the published studies, with high income countries overrepresented and most studies lacking demographic measures (Drury et al., 2021). The authors also note that these attitudes are likely to change over time, so studies conducted in 2020 based on hypothetical scenarios are likely to differ in their findings from those conducted now (Drury et al., 2021). We need this information to better understand and contextualise potential benefits and harm, and support necessary local adaptations.

The translation of science into policy and practice is similarly not a-contextual, as 'evidence does not form guidelines on its own' (Atkins et al., 2013). From the makeup and interactions of committee members, to the interaction of different policymaking sectors, to how evidence is considered, biomedical or scientific evidence should not be the only kind of evidence upon which these policies are based. We know that the 'success of [public health] interventions depends on local feasibility, acceptability, and fit with context—and hence on informed, shared decision-making with and by local communities' (Greenhalgh et al., 2014). Equally, a diversity of voices should feature in policy development processes, as well as in the implementation and communication of new policies, representing a diversity of experiences, interests, and priorities.

Bringing these local priorities and perceptions to the table is imperative. While economic and social considerations have featured in COVID-19 related documentation discussions over the last year (World Health Organization, 2020b; Das, 1999; Phelan, 2020; 2020c), one of the less explored questions is how the intense focus on COVID-19 is perceived and experienced in different settings. These differences in priorities affect the implementation of any policy or health intervention (Yarborough et al., 2013). The polio eradication programme in Nigeria, for example, highlights the frustration of local people who saw public health priorities not reflecting their own (but those of wealthier others), as resources were directed to polio over basic healthcare and other diseases that impacted them more (Maryam, 2007).

Moving forward

Immunity-based documentation is already being implemented in various countries to various extents, with Israel's Green Pass regulating entry to public spaces, Air New Zealand's trial of the Travel Pass mobile app which stores health information such as COVID-19 test results and vaccination status in March 2021, and the more recent rollout of the EU Digital Certificate in July 2021 (Holmes and Kierszenbaum, 2021; 2021a; 2021c). These policies have been incorporated to various extents in different countries—from regulating domestic or international travel to restricting entry to large events and public spaces. The public reception to these policies has been mixed—leading to increased vaccination rates in Italy and France as well as protests in France and Canada (Hart, 2021; Jonas, 2021). While it is too early to comprehensively understand the implications of these policies, collecting data on these experiences is helpful in not only providing feedback to adjust policies and their implementation, but to also mitigate any harms that may arise in relative real-time. The effects of these

measures and challenges with varying implementation will be felt differently across communities, populations, and countries potentially for years to come. These measures will become precedents for future policies, and will form the infrastructure for further public and global health systems. The perceived success of such measures will be determined by who you ask, when you ask them, and where they are. As such, these measures should not be uncritically transplanted from one context to another.

In prioritising a 'return to normalcy,' various countries have introduced policies for immunity passports that raise concerns about inequity by favouring more privileged populations. For example, when COVID-19 restrictions in Canada were announced at the end of 2020, the Immigration Minister exempted over 1700 athletes and business travellers from quarantine requirements (Harris, 2020). What does all of this reveal about the politics of life, and which lives—and which livelihoods—are valued? Studying these phenomena can add meaningfully to social science theory, which can and should feed back into the development of these policies, in order—rather than to 'return to normal'—to challenge the status quo and attending inequities, and better inform short- and longer-term public health responses. The experience gleaned from both diverse historical precedents and current social science research on the ongoing regulations to limit disease spread can broaden understandings of longer-term impacts and inform future effective and context-appropriate health policy and action.

Ethical statement

This study did not involve any human subjects and therefore was not subject to an ethical review process.

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Author contributions

SD, CP, BS, and HB provided background research and contributed to drafting the initial version of this manuscript. NG and TS provided edits and feedback. All authors revised the manuscript before submission.

Competing interests

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