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The Italian debate on the digital COVID certificate: co-producing epistemic and normative rationalities

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ABSTRACT
Italy's digital Covid certificate, known nationally as the 'Green Pass,' was enforced through unusual restrictions for a liberal democracy, as part of the government's effort to bolster the Covid-19 vaccination campaign. Since July 2021, the Green Pass provided the main authorizing tool for the public to access a wide spectrum of social spaces and activities, from leisure to public transport and from education to workplaces. The Green Pass therefore served as a normative technology, and triggered intense political controversy and heated debates in the Italian public discourse. In constructing claims about the Green Pass, advocates and critics alike co-produced normative arguments with understandings of scientific evidence. Notably, they articulated competing framings around: conceptions of freedom during a pandemic; what should be considered as 'evidence that matters' regarding the effectiveness of Covid-19 vaccines; value-laden projections of vaccination as either a solidaristic practice or an act of self-protection; the proper relationship between the state and its citizens; and the most appropriate modes of public health intervention. Accordingly, Italy's Green Pass offers a revealing case study for probing the implications of a normative technology with respect to public health effectiveness and the safeguarding of individual and social rights. It also provides an opportunity for scrutinizing the (re-)structuring of scientific and public health governance in a major Western democracy during a public health crisis.

KEYWORDS
Green pass; digital COVID certificate; framing; co-production; scientific and public health governance

Introduction

On October 15, 2021, Italy's pandemic containment strategy attracted international attention. On that day, the latest iteration of the national digital

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Covid certificate – known as the ‘Covid-19 Green Certificate’ (*Certificazione verde Covid-19*), or simply the *Green Pass* (henceforth: GP) – came into effect. From then on, public and private sector workers were required to show proof of Covid-19 vaccination (within the past 12 months), a recent negative swab test (within the past 48 h for a rapid antigen test), or recovery from the disease (within the past 6 months) to access workplaces and retain entitlements to salary or other remunerations. Through this measure, Italy ‘set a new bar for major Western democracies seeking to move beyond the pandemic,’ as *The New York Times* put it. ‘With the step, Italy, the first democracy to quarantine towns and apply national lockdowns, is again first across a new threshold, making clear that it is willing to use the full leverage of the state to try to curb the pandemic and get the economy moving’ (Horowitz, 2021).

Originally conceived in November 2020 as an instrument to preserve the free movement of people across Member States in the European Union (EU), the digital Covid certificate was soon employed as a tool to regulate movement within public space at the national level. Through the rapid iteration of the Italian government’s Law Decrees (Annex 1), the GP became a mandatory requirement for accessing leisure activities (July 2021), followed by education and public transport (September 2021), and, eventually, by public and private sector workplaces as well (October 2021). In late November 2021, a further tightening occurred, notably through the introduction of a ‘reinforced’ GP requirement based on vaccination or recovery certificates only for accessing a wide spectrum of social activities. These provisions involved some of the strictest social restrictions introduced in Europe since the early stages of the pandemic.

The introduction, iteration, extension, and tight enforcement of the GP requirement represented the signature policy in the first part of the mandate of the government headed by former European Central Bank chairman Mario Draghi, who took office in February 2021. However, as an attempt to bolster the Covid-19 vaccination campaign, the GP was soon mired in controversy. Although cross-party consensus within the Italian parliament soon developed around the government’s GP policy, thus largely depriving critics of political actionability, public opposition to this measure fueled heated debates. Opposition resulted in widespread and sometimes tense public protests, also reverberating beyond the national borders (see, e.g. BBC, 2021; Il Post, 2021; La Stampa, 2021).

Through a document analysis of institutional, scientific, and secondary sources, this article sets out to reconstruct the articulation of the Italian public discourse on this policy, charting the main disputed issues and the contrasting arguments deployed by GP advocates and critics. As is not uncommon within the Italian public sphere, characterized as it is by recurrent forms of polarization (see e.g. Mancini, 2013), the public discourse around the GP quickly became fractured across opposite factions, which actually did not seem to coincide with existing social and political cleavages, but rather traced a new major fault line within the Italian body politic.[1] Emerging discourse coalitions (Hajer, 2006) engaged

in a politics of framing (Vaughan-Williams, 2009), as a way to make sense of and define the stakes in the GP mandate. As will be shown, competing frames and counter-frames were used by GP advocates and critics to articulate normative arguments about what freedom in times of a pandemic should amount to, which were co-produced (Jasanoff, 2004) along with distinct ways to confront epistemic uncertainty (Tallacchini, 2020; Boem and Ratti, 2021) and appropriate scientific evidence around Covid-19 vaccines.

Accordingly, the Italian GP represents an insightful case study to investigate emerging (and contested) rationalities of scientific and public health governance within a major Western democracy during a global pandemic (Jasanoff *et al*., 2021). It also represents a revealing test case for probing the pitfalls of public debates on Covid-19 policies shaped around binary oppositions and dichotomic framings (Lucivero *et al*., 2022). In particular, this article intends to reflect upon the following questions: which epistemic and normative reasonings inform the GP policy, and how did they mutually reinforce each other? What alternative normative and epistemic claims have been articulated in critiques of the GP? What prevalent model of scientific and public health governance underpinned the Italian government's policy, and what were the key contested issues emerging around it?

In what follows, I first outline the analytical perspectives and methodology informing my analysis. Next, I outline the main policy developments, at both the EU level and the Italian level, regarding the digital Covid certificate. This policy timeline includes developments occurring from the onset of policy debates around the digital Covid certificate, in November 2020, until the '*reinforced'* GP ('*Green Pass rafforzato*', based on vaccination or recovery certificates only) was turned into a mandatory requirement for accessing most social activities, in December 2021. This is why my argument will focus on the most salient junctures in the GP debate, before the latter faded as other international events came to the fore in February 2022. In the main section of the paper, then, I present and discuss five prominent issues around which competing frames were articulated in the Italian public discourse by GP advocates and critics. These issues include:

(i) normative conceptions of freedom in times of a pandemic;
(ii) understandings of scientific evidence with regard to Covid-19 vaccines;
(iii) the values driving the rollout and uptake of Covid-19 vaccines;
(iv) the envisaged allocation of agency and responsibility between state and citizens; and
(v) the most appropriate modes of intervention for managing public health (for an overview, see Table 1).

In so doing, I foreground how normative and epistemic rationalities mutually reinforced each other in the framing of these issues. In the discussion

Table 1. Overview of mutually reinforcing normative and epistemic framings on five contested aspects of the Green Pass.

Issue at stake	Type of order	Framing by GP advocates	Framing by GP critics
Conceptions of freedom in times of pandemic	Normative	GP as means for restoring freedom (of movement, for economic activities, in social life)	GP as hindering freedoms. Form of stigmatization and discrimination. Leading to a surveillance society, perpetuating a 'state of exception'
Understandings of scientific evidence	Epistemic	GP as evidence-based policy. Effectiveness of Covid-19 vaccines in containing the pandemic. Appeals to 'sound science' are frequent, GP critics projected as 'anti-vaxxers', 'pandemic denialists'.	Lack of long-term data on vaccines (EMA granted a CMA), lack of positive risk-benefit ratio in low-risk populations (e.g. adolescents). Lack of robust scientific evidence over effectiveness of vaccines in preventing onward transmission of the virus. Detailed examinations over matter of scientific evidence are carried out, along with disputes around what should count as evidence that matters.
Values underpinning Covid-19 vaccine uptake	Normative	Vaccination as a solidaristic practice (protecting others) endowed with an eminently social/public value.	Vaccination as a form of self-protection, thus representing a strictly personal and non-coercible decision (individual value of Covid-19 vaccination).
Allocation of agency and responsibility between State and citizens	Normative	GP as a means for granting agency to, and preserving the autonomy of, citizens in the decision-making process.	Renunciation of the State on its responsibilities; obligations imposed to citizens in the name of tokenistic appeals to individual autonomy.
Modes of intervention for managing public health	Normative/ epistemic	Immunization (from the virus, as well as from undesirable social practices) as key paradigm for public health intervention.	Immunization paradigm as tantamount to biopolitical control.

section, I elaborate on the article's main findings by outlining some key implications of the GP regarding scientific and public health governance, as well as the management of epistemic uncertainty and normative disagreement.

Analytical perspectives

By analyzing the GP debate, this article builds upon framework analysis developed in Science and Technology Studies (STS) and cognate disciplines in the social sciences. As socially shared organizing principles that convey meaning and give structure to the social world (Reese, 2007), frames 'guide how the elite construct information, they affect … information selection, they are manifest in media texts, and they influence cognitions and attitudes of audience members' (Matthes, 2012, p. 248-249). As defined by Entman, to frame is 'to select some aspects of a perceived reality and make them more salient … , in such a way as to promote a particular problem definition, causal interpretation,

moral evaluation, and/or treatment recommendation for the item described' (Entman, 1993, p. 52). The activity of framing is fundamentally part of politics, rather than being divorced from it. As observed by Vaughan-Williams (2009, p. 158), 'any form of framing constitutes praxis in its own right, with important ethical and political ramifications.' In STS, framework analysis has long since occupied a prominent position in the study of scientific and technological governance (Wynne, 2002; Roth *et al.*, 2003; Irwin, 2008). A focus on the dynamics of framing and counter-framing has proved a useful analytical approach to understanding the formulation (and contestation) of public health policy, in particular, to identify the discursive strategies employed not only by institutional actors to present proposed policy as science-based but also by critics to deconstruct such representations (see, e.g. Roth *et al.*, 2003).

As elaborated by Jasanoff (2004), the notion of co-production represents an additional analytical tool used in this article to investigate the mobilization of mutually reinforcing normative and epistemic frames around the GP. Co-production calls attention to the simultaneous, two-way processes through which societies form their epistemic and normative understandings of the world. As contended by Jasanoff, 'we gain explanatory power by thinking of natural and social order as being produced together' (Jasanoff, 2004, p. 2). In STS scholarship, co-production has been fruitfully employed to investigate how discursive practices inform efforts to shore up – or, conversely, deconstruct – modes of scientific governance and structures of scientific authority (see, e.g. Rabeharisoa and Callon, 2004; Waterton and Wynne, 2004; Testa, 2008). In the context of framing and counter-framing practices within the Italian GP debate, I use co-production as an analytical tool to illuminate several issues. First, co-production helped address how competing arguments about the normative legitimacy of the GP (or lack thereof) were sustained by specific understandings of emerging scientific evidence around Covid-19 vaccines, while also seeking to consolidate these understandings. Co-production also helped address how epistemic stances around the type of 'protection' afforded by Covid-19 vaccines were informed by, while contributing to sustaining, distinct positions on either the social or individual value of Covid-19 vaccination. Accordingly, co-production represents an ideal heuristic to investigate mutually shaping epistemic and normative rationalities mobilized to sustain (or contest) the Italian GP policy.

Following the above, the argument presented here is ultimately geared toward advancing scholarship on scientific governance within contemporary democratic societies, notably in areas of emerging scientific and technological innovation (Irwin, 2006; Irwin, 2008; Guston, 2014; Kuhlmann *et al.*, 2019). In the context of the Covid-19 pandemic, country-specific configurations of scientific and public health governance have been shown to play an enabling role in supporting (or not supporting) a country's capacity to respond, effectively but also democratically, to the diverse – public health, economic, and political – challenges produced by the pandemic (Jasanoff *et al.*, 2021). As noted

elsewhere (Marelli *et al.*, 2022), the limited success of some prominent forms of 'techno-solutionist' interventions during the pandemic, including the controversies they triggered, can be traced to inflexible, assertive, and definitive modes of governance that have tended to downplay epistemic uncertainties, while attempting to neutralize moral disagreement. The opposite is true, in fact, as I argue in this article: the highly dynamic evolution of both the Covid-19 pandemic and the technologies deployed to contain it – from digital contact-tracing apps to vaccines – seemed poised for 'adaptive' or 'tentative' governance approaches predicated on flexibility, prudence, and incrementality (Irwin, 2006; Olsson *et al.*, 2006; Kuhlmann *et al.*, 2019). As contended by Kuhlmann and colleagues (2019, 1093), tentative governance can indeed be favored 'where actors try to cope with political and organizational complexities and uncertainties' while confronting epistemic uncertainties posed by emerging science and technology. In the discussion section, I will return and discuss this aspect in light of the empirical analysis presented below.

Methodology

In my analysis, I followed an 'inductive iteration strategy,' which starts from prior yet not full-fledged theoretical assumptions and involves iterative cycles of theory-data dialogue (Yom, 2015). I adopted an 'opportunistic' or 'emerging' sampling strategy for data collection (Patton, 2002; Suri, 2011), which makes it possible to 'take advantage of whatever unfolds as it unfolds' while providing 'the option of adding to a sample to take advantage of unforeseen opportunities after fieldwork has begun' (Patton, 2002, p. 240; Suri, 2011, p. 71). Through this strategy, I traced the evolution of the Italian public discourse on the GP six months (July – December 2021). Through qualitative content analysis and inductive coding, I progressively identified the five points outlined in Table 1 as key issues around which competing framings were articulated. Document items considered in the analysis were collected from the following sources:

(i) websites of institutions involved in policy elaboration and discussion around the digital Covid certificate (chiefly those of the Italian Presidency of the Council of Ministers, the Italian Ministry of Health, the Italian Senate, the Presidency of the Italian Republic, and the European Commission);
(ii) relevant scientific literature (notably from the fields of biomedicine and public health), as mobilized by actors in the public discourse; and
(iii) (iii) secondary media sources.

Regarding the last set of sources, I included a diversity of items from a broad range of sources across the spectrum of positions involved in the debate to avoid selection bias. Consistent with recent scholarship pointing to online

platforms, including social media, as a privileged means for engaging in debates by contemporary public intellectuals (e.g. Dahlgren, 2012; Brandmayr, 2021), I also collected data from media and document items available online. This includes consideration of tweets from actors who played a prominent role in the debate (both advocates and critics of the GP), as Twitter emerged – perhaps unsurprisingly (see, e.g. Brandmayr, 2021) – as a prominent platform for discussing and conveying competing ‘story lines’ (Haijer, 2006) around the GP and Covid-19 vaccines.[2]

The digital COVID certificate: policy timeline

The original conception of the ‘digital COVID certificate’ owes to EU-level initiatives intended to preserve free movement across EU Member States, thus avoiding the fragmentation of policies and national border closures that characterized the first wave of the pandemic (EU Commission, 2021). As of November 2020, discussions the EU Commission and EU Member States held discussions within the eHealth Network – the platform for policy coordination on digital health at the European level. These discussions laid out the guidelines for interoperability requirements of digital vaccination certificates. The EU Commission issued the guidelines in January 2021 (EU Commission 2021). In March, ‘Trilogue’ negotiations started among the EU Commission, the Council of the EU, and the EU Parliament, to develop legislative text establishing a common framework for an EU-wide digital Covid certificate. An agreement among Member States was reached on April 22, while a final agreement within the EU Parliament was in place by May 20. This led to the promulgation of Regulation EU 2021/953, which entered into force on June 14. In the meantime, on June 1, the EU Gateway enabling interconnection of national systems was established. A month later, the EU digital Covid certificate was formally implemented throughout the EU. As of July 1, 2021, EU citizens and residents have been able to have their digital Covid certificates issued and verified across the EU (EU Commission, 2021).

At the national level, France was a frontrunner in turning its national version of the digital Covid certificate, the ‘*pass sanitaire*,’ from an instrument to avoid supranational fragmentation and border closures to a tool for segmenting and regulating its public space internally. On July 12, President Emmanuel Macron announced the extension of the *pass sanitaire* requirement for accessing recreational and cultural activities as of July 21 and restaurants and bars, healthcare facilities, as well as long-distance transportation as of August 1 (Elysée, 2021).

Soon thereafter, the Italian government, which openly referred to the French model as the one to follow (RaiNews, 2021), introduced its GP requirement (Figure 1). Upon the enactment of a Law Decreto on July 23 (Decreto-Legge 23 Luglio 2021, n. 105), the GP became mandatory, as of August 6, for all

Certificazione verde COVID-19

EU Digital COVID Certificate

IT

Cognome e Nome
Surname(s) and forename(s)

Data di nascita
Date of birth(yyyy-mm-dd)

Identificativo univoco del certificato
Unique Certificate identifier

INFORMAZIONI GENERALI

Certificato rilasciato da: Ministero della salute, ITALIA.
Issued by: Ministry of health, ITALY.

App di verifica autenticità e validità in Italia:
Verifier APP in Italy: VerificaC19

Per ulteriori informazioni e informativa privacy:
www.dgc.gov.it; www.salute.gov.it

Questo certificato non è un documento di viaggio. Le evidenze scientifiche sulla vaccinazione, sui test e sulla guarigione da COVID-19 continuano ad evolversi, anche in considerazione delle nuove varianti del virus. Prima di viaggiare, controllate le misure di salute pubblica applicate nel luogo di destinazione e le relative restrizioni anche consultando il sito:
https://reopen.europa.eu/it

This certificate is not a travel document. The scientific evidence on COVID-19 vaccination, testing and recovery continues to evolve, also in view of new variants of concern of the virus. Before traveling, please check the applicable public health measures and related restrictions applied at the point of destination. Relevant information can be found here:
https://reopen.europa.eu/en

Istruzioni per piegare il foglio
Folding instructions

Certificazione di vaccinazione
Vaccination Certificate

Malattia o agente bersaglio Disease or agent targeted	Covid-19
Tipo di vaccino somministrato Vaccine/prophylaxis	SARS-CoV-2 mRNA vaccine
Denominazione del vaccino Vaccine medicinal product	Comirnaty
Produttore o titolare dell'AIC del vaccino Vaccine marketing authorisation holder or manufacturer	Biontech Manufacturing GmbH
Numero della dose effettuata/numero totale dosi previste Number in a series of vaccinations/doses and the overall	
Data dell'ultima somministrazione Date of vaccination (yyyy-mm-dd)	
Stato in cui è stata eseguita la vaccinazione Member State of vaccination	IT
Soggetto che ha rilasciato la certificazione Certificate issuer	Ministero della salute

Certificazione valida 270 giorni (9 mesi) dalla data dell'ultima somministrazione

Figure 1. The 'Green Pass' (redacted paper version).

those who wanted to access indoor restaurants, sporting venues, and competitions, as well as other recreational and cultural venues in Italy. Owners and managers of such facilities were tasked with ensuring compliance with this provision, which was only waived for citizens excluded by age from the vaccination campaign or exempted on the basis of a suitable medical certification.

The government soon extended the GP (Decreto-Legge 6 agosto 2021, n. 111), by rendering it a mandatory requirement, as of 1 September 2021, to access schools, universities, and public transport (with the exception of local mobility). In September, along with vaccine mandates for personnel in residential, social welfare, and social health facilities (Decreto-Legge 10 settembre 2021, n. 122), additional extensions of the GP were introduced for public and private sector workers, including the courts and members of parliament (Decreto-Legge 21 settembre 2021, n. 127). In parallel, the government also introduced a fixed reduced price for rapid antigen tests while also ensuring not to provide the latter for free because this would have reduced peoples' motivation to get vaccinated (RaiNews 2021b). These provisions became effective as of October 15. A further tightening occurred with the promulgation of another Law Decree on November 26 (Decreto-Legge 26 novembre 2021, n. 172). As of December 6, this decree introduced a '*reinforced*' GP (dubbed the '*Super Green Pass*') for accessing numerous social activities (including leisure activities, sporting events, indoor catering) based on vaccination or recovery certificates only. The decree also extended the requirement of the 'basic' GP to local mobility and reduced the validity of the GP based on the vaccination certificate to 9 months (for a complete overview of policy developments in Italy, see Appendix 1).

This set of provisions was tied to the enactment of a national state of emergency, declared on January 31, 2020, and iterated on until March 31, 2022.

Charting competing framings around the Green Pass mandate

The Italian government explicitly developed the GP to encourage Italian citizens to get vaccinated, in light of the perceived need to accelerate vaccine uptake while avoiding widespread vaccine mandates. As Health Minister Roberto Speranza stated in the press conference on the first major extension of the GP (22 July 2021): 'The basic message that I believe as a government we want to give, in the firmest and most convinced way, is to get vaccinated, get vaccinated, get vaccinated' (Presidenza del Consiglio dei Ministri, 2021). As further contended by PM Mario Draghi on the same occasion: 'The appeal not to get vaccinated is, basically, a call to die – you do not get vaccinated, you get sick, you die – or you make someone die – you don't get vaccinated, you get sick, you get infected, he/she dies – that's it' (Presidenza del Consiglio dei Ministri, 2021).

In the words of some commentators, the GP represented the 'work of scalpel rather than hatchet' and a 'gentle push' to achieve the desired political outcomes (Panetto, 2021; Veronesi, 2021).[3] Yet, the GP swiftly turned into an increasingly controversial measure, as it imposed limitations on fundamental liberties and rights, arguably in a way unprecedented since the creation of the Italian Republic.

This decision pitted advocates against critics in highly charged public debates, which included a prominent role for experts on opposite sides of the debate. (For a more in-depth analysis on the roles of experts during the pandemic in the Italian context, see Lavazza and Farina, 2020). In these debates, the GP was conceptualized and mobilized in largely contrasting terms. It is possible to identify opposing framings as articulated around five key issues in particular:

i. Normative conceptions of what, in times of a pandemic, 'freedom' amounts to and how it should be achieved and/or preserved;
ii. Understandings of scientific evidence regarding Covid-19 vaccine rollout;
iii. The values underpinning Covid-19 vaccine uptake;
iv. The most appropriate modes of intervention for managing public health in times of a pandemic and;
v. The allocation of agency and responsibility between citizens and the state.

These issues and the various competing framings articulated by GP advocates and critics are discussed in detail in the following sections (for an overview, see Table 1).

Normative conceptions of freedom in times of a pandemic

Proponents envisaged the GP as a condition for preserving economic and social activities largely impacted by protracted lockdowns and restrictions since March 2020. As argued by Italian Prime Minister Mario Draghi:

> Let it be clear: the Green Pass is not an abuse [arbitrio], it is a condition for keeping economic activities open. … It is a measure through which Italians can continue to carry on their activities, have fun, go to restaurants, participate in outdoor and indoor shows, with the guarantee, however, of finding themselves among people who are not contagious. (Presidenza del Consiglio dei Ministri, 2021)

In this sense, advocates argued, the GP should be conceived as a lighter-touch alternative to a vaccine mandate rather than a coercive measure alternative to a no limitation approach. The GP was meant to *enhance* free movement and open us social and economic activities instead of *constraining* them (Cazzullo, 2021; Turati, 2021). In articulating such claims, advocates of the GP typically resorted to 'impure paternalism' arguments, which legitimize forms of limitation to individual freedom as long as they serve the purpose of avoiding harm to the good of other people or society as a whole (Dworkin, 2020; Sala and Sanchini, 2020). As argued by one leading commentator, journalist and writer Aldo Cazzullo: 'If in the course of a pandemic it is possible to recognize – at some cost – the freedom not to be vaccinated, and therefore to put oneself at risk, the abuse of power to put others at risk should never be allowed' (Cazzullo, 2021).

For critics, the GP introduced a surreptitious vaccine mandate, representing the *de facto* authorizing tool to access several public spaces and actively participate in public life. As such, it represented a form of discrimination against citizens, which could also lead to stigmatization of the unvaccinated (Cacciari and Agamben, 2021; see also Kampf, 2021). At the same time, critics saw the GP as introducing undue limitations on personal liberties and civic rights while also being in conflict with other constitutionally sanctioned values. This included the right to work as enshrined in Art. 1 of the Italian Constitution (Cerrina Feroni, 2021). In this light and as a tool for segmenting national public space and controlling movement within it, the GP was equated to the Health Code system adopted in China (Perrone, 2021)

Moreover, according to some prominent philosophers, such as Giorgio Agamben and Massimo Cacciari, who in the public debate emerged as vocal critics of this measure, the GP normalized digital control over citizens. Furthermore, it promoted disciplining of the population while introducing fundamental yet surreptitious reconfigurations in the social contract between the state and citizens, without formally implementing any visible change in the underpinning constitutional architecture of the Italian republic (Agamben 2021; Cacciari, 2021). In this regard, as argued by Cacciari (2021), the GP perpetuated a 'state of exception,' which, for 'at least 20 years,' in his view, 'has conditioned, weakened, and limited freedom and fundamental rights.'

On pragmatic grounds, critics perceived the restrictive approach adopted by the Italian government as unjustified in light of the evolution of both the pandemic, with low occupancy rates of ICUs and one of the highest vaccine uptake rates in Europe.[4]

Understandings of scientific evidence

Both critics and proponents acknowledged that the government's intended purpose of the GP was to motivate the Italian people to get vaccinated against Covid-19. Accordingly, much of the debate has focused on whether and how 'science' and scientific evidence legitimized (or failed to legitimize) the enforcement of what critics saw as a *de facto* widespread vaccine mandate. Therefore, normative arguments about the GP's legitimacy – or lack thereof – were co-produced (Jasanoff 2004) along with specific understandings of what should count as 'evidence that matters' for assessing the scientific soundness of the push towards Covid-19 vaccination.

For proponents and advocates of the GP, the push towards vaccination clearly represented an evidence-based policy, which was uncontroversially backed up by the available scientific evidence (Baducco, 2021). References to 'sound science' were ubiquitous in the claims advanced in support of the GP. Covid-19 vaccines were hailed as the main reason for the sharp reduction in the number of infected people (either symptomatic or asymptomatic) testing

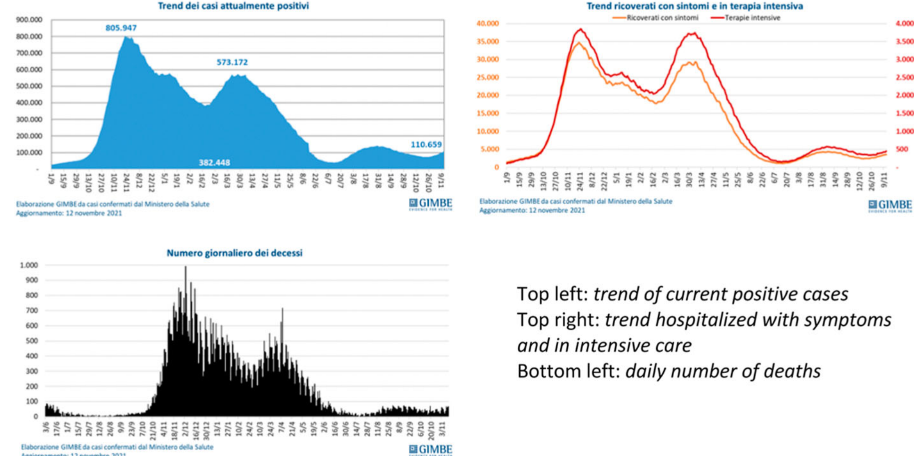

Figure 2. Data mobilized by GP advocates to vindicate the effectiveness of vaccines in controlling the pandemic (source: Italian Ministry of Health, data elaborated by GIMBE Foundation).

positive for Covid-19, the occupancy rate of hospital beds and ICUs, and the daily number of Covid-19-related deaths since the rollout of the nationwide vaccination campaign (Figure 2). Accordingly, epidemiological data around these aspects were frequently mobilized as a vindication of the effectiveness of Covid-19 vaccines, of their efficacy as a public health tool to manage the pandemic, and of the government's strategy to bolster the vaccination level through the GP (see tweet by Burioni, 2021). As one clinician, Gori, put it:

> Without vaccines, the situation would be that of last year. That today Italy is in control, despite being surrounded by countries in a state of emergency, is merely due to the extreme effectiveness of vaccination. The state that took the most stringent approach was Italy, with its [mandatory] green pass: today the world looks at us with envy. (Gori, quoted in Chiale, 2021)

Conversely, critics of the GP have employed various strategies to criticize Italy's GP policy from an epistemic basis. Some critics pointed to the fact that the European Medicines Agency (EMA), tasked with authorizing the commercialization of vaccines in the EU context, had only provided a Conditional Market Authorization (CMA) due to the lack of long-term data owing to the fast-tracked vaccine development process (Beretta and Marelli, 2023). CMA is an accelerated regulatory tool that allows for expedited medical products' licensure and early marketing if their immediate availability has an important public health impact (European Commission, 2020). Consequently, critics considered the available scientific evidence as not shoring up the legitimacy of a policy seen as *de facto* introducing a surreptitious vaccine mandate (Mangia, 2021).

A second set of critics emphasized the data (or lack thereof) on adverse effects and stressed the absence of a favorable risk-benefit ratio – specifically in low-risk populations such as children or adolescents (Gandini 2021). A

third strand of GP criticisms revolved around fine-grained discussions about what should count as 'evidence that matters' for assessing the reasonableness of the political push towards Covid-19 vaccination. In a series of tweets in November 2021, one of the main critics of the GP, MP Claudio Borghi (Borghi, 2021), acknowledged the effectiveness of Covid-19 vaccines in protecting individual people from the worst outcomes of the disease (Bernal *et al.*, 2021), resulting in reduced hospitalization rates, ICU admissions, and deaths. Simultaneously, Borghi argued that this is not the issue that should be at stake in the debate around the GP. After all, the legitimacy of limitations to individual freedom (through the GP) could be granted only inasmuch as vaccines were demonstrably effective in preventing or reducing *onward transmission of the virus* and *interpersonal contagion*. Therefore, it first needed to be established that *individual* vaccination indeed prevented harm to *other* people within the community (Borghi, 2021).

On this basis, critics contended that the available evidence did not lend sufficient scientific weight to the imposition of the GP. Their argument was threefold. First, they argued that available epidemiological data could support, at most, a mere probabilistic and inconclusive assessment of the effectiveness of vaccines in preventing or reducing the virus' transmission. In articulating such claims, references were frequently made to epidemiological data pointing to high infection rates in countries or regions with high vaccine uptake, such as Israel and Iceland (see tweets from Borghi, 2021b, 2021c). On the contrary, emerging evidence suggested that, against the 'delta' variant of the SARS-CoV-2 virus (the B.1.351 variant), protection against onward transmission is 'suboptimal' (Wilder-Smith, 2022) and wanes quickly (i.e. after three months) following the second vaccination (Cosentino 2021, quoting the pre-print study from Eyre *et al.*, 2021, later published in the *New England Journal of Medicine*, see Eyre *et al.*, 2022). In turn, this called into question the rationale for enforcing a GP certificate with a twelve-month validity. The latter was also on a collision course with the rationale underpinning the administration of the third 'booster' dose as of late September 2021. In fact, the 'booster' dose was explicitly develop to address potential waning immunity over time and reduced effectiveness against the delta variant (and, subsequently, the omicron variant) (Barda *et al.*, 2021; Cosentino, 2021) Figure 3.

Values underpinning COVID vaccine uptake

The controversy over scientific evidence was directly tied up with conflicting conceptions regarding the *values* underpinning Covid-19 vaccine rollout and uptake. While mostly playing out under the radar, rather than openly in public discussion, GP advocates and critics fundamentally disagreed over framing the vaccination as either a solidaristic practice aimed at protecting the larger community or an act of individual protection.

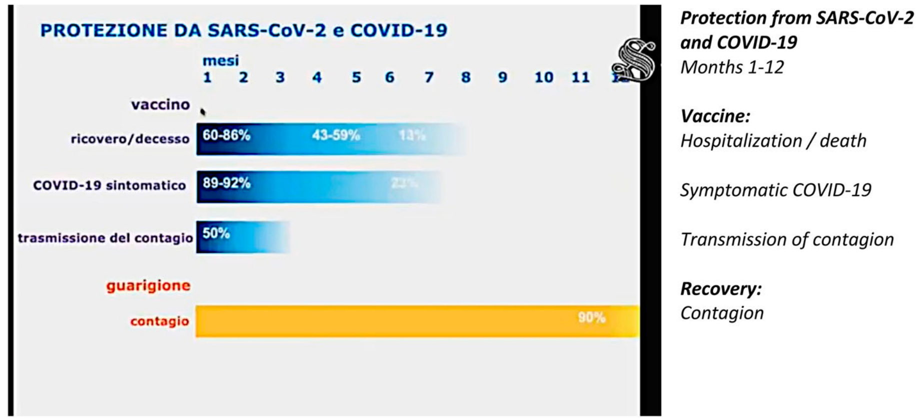

Figure 3. Italian Senate, Constitutional Affair Committee, 7 October 2021, videoconference hearing on ddl n. 2394. Presentation of scientific evidence on vaccines waning immunity (notably against onwards transmission of the SARS-CoV-2 virus), mobilized by critics to contest the epistemic rationale of the GP.

Advocates of the GP claimed that Covid-19 vaccination represented a *solidaristic practice* endowed with an inherent *public value*. As put forward by the president of the Italian republic, getting vaccinated represents a 'civic duty' that 'arises from the concrete reality that demonstrates that the vaccine is the most effective tool we have to defend ourselves and to protect the weakest and most exposed to serious dangers' in our society. Thus it serves to avoid 'a new paralysis of social and economic life; new, widespread closures; and, further, heavy consequences for families and businesses' (Presidenza della Repubblica, 2021, 2021b).

Upon closer scrutiny, such claims were often underpinned by two distinct assumptions. First, inasmuch as Covid-19 vaccination protected individual people from the worst effects of the disease, vaccination sought to provide relief to strained healthcare resources. Consequently, self-protection through vaccination provided a highly valued social good. Indeed, throughout the pandemic, deferral in access to a broad spectrum of healthcare services emerged as a major issue of societal concern (see, e.g. Moynihan *et al.*, 2021), the impact of which could be reduced by freeing up resources previously allocated to Covid-19-related care. Second, GP advocates assumed that Covid-19 vaccines represented an effective tool to reduce the transmission of the virus. For instance, as contended by the head of the Italian Medicine Agency (AIFA) in December 2020, 'both Pfizer's and Moderna's vaccines guarantee sterilizing immunity,' meaning that 'they not only protect against the most serious effects [of Covid-19] but also prevent one person from infecting others' (Il Mattino TV, 2021). Inasmuch as getting a vaccination made it possible to realize this goal, getting vaccinated represented an act of solidarity geared to the protection of other members of society, in particular those most vulnerable.

Conversely, as discussed above, critics of the GP disputed this line of reasoning by explicitly claiming that while Covid-19 vaccines so far had provided an effective level of *self*-protection, they could not be said to represent a tool primarily intended to protect *other* people (tweet from Borghi, 2021d). Critics cited available scientific evidence and the behavior vaccination may induce (e.g. adopting more risk-prone behaviors due to the feeling of safety induced by the vaccine). Therefore, GP critics rejected the framing of Covid-19 vaccines as a solidarity measure and insisted instead that getting vaccinated should be conceived as a measure of self-protection. Such an act, accordingly, could only be bound to the uncoerced self-determination of individual people. Symmetrically, the critique of the surreptitious vaccine mandate entailed by the GP should not be seen as grounded on an individualistic or anti-solidarity stance, for solidarity is not the main benefit of this policy tool (see tweet from Borghi, 2021d).

Two more issues emerged as paramount in the co-production of normative claims, understandings of scientific evidence, and the individual or social value of vaccines. These concern the role of personal and state responsibility, as well as the most effective means to achieve the shared objective of public health protection.

Allocation of agency and responsibility between state and citizens

A fourth contrasting framing pertained to the allocation of agency and responsibility between citizens and the state, as entailed in the deployment of the GP.

Equated by some to a form of nudging (or a 'gentle push') (Panetto, 2021), advocates framed the GP as a means for granting agency to and preserving the autonomy of citizens in the decision process. Before the introduction of the 'reinforced GP' outlined above (the analysis of which is beyond this article's scope), citizens were free to resort to other means of obtaining certification, by undergoing frequent Covid-19 testing (even though they obviously were encouraged to get vaccinated instead). Moreover, citizens were asked to provide their informed consent when getting vaccinated, thereby asserting their prerogatives of autonomy and self-determination. (This included assuming the known and unknown risks associated with vaccine uptake).

For critics, the rhetorical construction of this autonomous subject in light of the obligations *de facto* imposed by the GP represented an apparent renunciation by the state in the exercise of its responsibilities. This was all the more evident, as some critics contended, by the fact that the government did not impose a widespread vaccine mandate, which would have represented a more coherent and responsible way to achieve its aim of enacting a widespread vaccination campaign. Instead,

> the State wanted to achieve the same result, and did so with the indirect instrument of the green pass, which on the one hand caused a very large segment of the citizenry to opt for vaccination, so as not to be excluded from social life, while on the other hand it

> also allowed the State not to assume any responsibility 'as to the issue of vaccination,' because formally being vaccinated was not compulsory and left to decide for everyone on their own. (Agamben, Cacciari, and Scarselli, 2021)

This criticism of the state's lack of responsibility related to providing direct compensation for any of the vaccine's side-effects, regardless of whether they depended on malpractice on the part of the doctors who administered it.

Moreover, the traditional role of informed consent as the hallmark of individual autonomy in the medical realm was also questioned in the case of Covid-19 vaccines, because of the potential undue influence of the GP requirement. In other words, how can one be said to undertake 'voluntary' vaccination – and provide informed consent accordingly – when not doing so will result in having to undergo and pay for frequent testing or face suspension from work and salary? (Agamben, 2021b; see also Sartori, 2021).

Competing modes of intervention for managing public health

All these various considerations by advocates and opponents of the GP contributed, in turn, to underpinning the framing of competing governance strategies for managing the pandemics.

For proponents of the GP, the preferred course of action to manage the pandemic hinged on the *immunization* of the biological and social body. Accordingly, they advanced a mode of intervention that blended the two main approaches deployed for managing public health during the pandemic. These approaches included those targeting the virus through medicines or vaccines (*biomedical* modes of intervention) and those targeting social practices through measures such as social distancing in public spaces (*social* modes of intervention) (Jasanoff *et al.*, 2021).

First, control of the pandemic required citizens to be *immunized from the virus*, whereby vaccines represented the foremost instrument to achieve such an aim. Italian citizens were thus framed as biological entities in need of protection, which could only be provided through biomedical means. Alternative forms of immunization, such as that provided by recovery from the disease, were deemed ineffective ways to bring the pandemic under control. Likewise, 'physical distancing' from the virus, as attested by periodic recurrence of negative test results, was considered a largely ineffective strategy for the long-term protection of the social body.

The senate hearing involving the head of the Italian national institute of health (*Istituto Superiore di Sanità*, or ISS), which took place on October 7, 2021, provides a telling example of the framing underlying this approach. In laying out the public health strategy of the Italian government, geared to incentivize citizens towards immunity-through-vaccination while disincentivizing Covid-19 testing, the head of the ISS was adamant about the following: '[Covid-19] tests are not a guarantee of immunity. The objective we have to

pursue as a country is certainly to ensure the highest immunity within the population, keeping it over time, so that all activities can be resumed with the highest possible level of security' (Brusaferro, 2021).

In parallel, the enactment of a biomedical mode of intervention is accompanied by the requirement that citizens be (metaphorically) '*immunized' from undesirable social practices*. Proponents framed these as hindering the path to recovery and jeopardizing the orderly cohesion of the social body as a whole. In this second sense, controlling the pandemic entailed the regimentation of citizens, projected as unruly subjects under the paternalistic guidance of the state. Undesirable social practices comprised all forms and degrees of 'vaccine hesitancy', including resorting to modes of intervention other than vaccination, as well as the articulation of alternative normative viewpoints, which were said to provide 'ideological justification to dangerous theories' (see, e.g. Simeone, 2021).

For critics, the combined biomedical and social modes of intervention amounted to the enactment of overt biopolitical governmentality, geared to achieving pervasive forms of control over the lives of citizens while legitimizing a method of government based on thorough surveillance and control (Cacciari *et al*., 2021). (For closer scrutiny on the notion of biopolitics in the context of Italian pandemic policies, which is beyond the scope of this article, see Pellizzoni and Sena, 2021.) This biopolitical framing aligned critics who otherwise tended to hold different and, at times, competing positions over the alternative preferred modes of intervention to navigate the pandemic. While some would have supported a direct vaccine mandate as a matter of coherence, others, at the opposite end of the spectrum, tended to reject every form of emergency provision, identified as part of an intrinsic tendency within contemporary neoliberal democracies towards the enactment of pervasive forms of biopower (Acotto, 2021). Again, other critics took aim at the excessive emphasis placed on vaccines as the sole mode of intervention in the government's public health strategy. The sociologist Luca Ricolfi, for example, argued:

> If the government continues to send the message that the problem is the unvaccinated, and the vaccinated must be rewarded by allowing them to do almost anything, the epidemic will get a big boost. But more in terms of cases than hospitalizations and deaths: I think we will not get to the point of saturating intensive care. (Malfetano, 2021)

Discussion

From this paper, it is possible to distill lessons that could inform pandemic preparedness policies in the future, in the Italian context and beyond.

First, my analysis points to the inherent pitfalls of a public debate too often relying – on both sides – on dichotomic and largely simplistic framings, channeled through notions such as 'pro-vax' and 'no-vax,' which fail to capture the

complexity of the issue at stake. On the one side, the rhetorical appeal to 'sound science' by GP advocates has often been played out *ex negativo* by framing opponents as devoid of scientific credibility. In particular, through the support of powerful and largely aligned media organizations, GP advocates have projected an image of critics of the GP as 'anti-vaxxers' (*no vax*), 'pandemic denialists,' and 'champions of antiscientific thought.' This rhetorical strategy has been conducive to downplaying the legitimacy of opposing argumentations and pre-empting the formation of a competing discourse-coalition itself endowed with the credibility to speak and raise counter-arguments 'in the name of science.'

On the other side, a number of (vocal) critics of the GP, who were especially active on social media, thoroughly fitted the characterization of 'anti-vaxxers' and 'pandemic denialists' as they engaged in overmagnifying the alleged dangerousness of Covid-19 vaccines, sometimes by manipulating or fabricating the data. This approach, however, obfuscated the more reasonable arguments advanced by several critics of the GP, such as those discussed in this article. As argued at the beginning of the Covid-19 vaccination campaign (Marelli *et al.*, 2021), this – foreseeable – feature of the unfolding public discourse was bound to greatly limit the possibility of an informed and democratic debate.

Second, the case of the GP points to the importance of adequately accounting for scientific uncertainty in policy decision-making. Deciding to wait until a high degree of scientific certainty is reached to undertake pandemic containment measures may lead to delays in policy response (Evans, 2021). Conversely, if one acts under conditions of uncertainty and upon merely probabilistic evidence – as is mostly the case in the early stages of pandemic containment interventions such as Covid-19 vaccines – one should not smooth over such uncertainty in the quest for political legitimacy. On the contrary, inasmuch as available scientific evidence can be appropriated in distinct ways to ground policymaking, it is paramount that policymakers and their allies (foremost media commentators) be transparent in highlighting the value-laden considerations and normative commitments underpinning the uptake of evidence without relegating them to the rubric of 'scientific objectivity' or 'follow the science' statements. As amply shown by research in STS (e.g. Nowotny *et al.* 2001) and once again established by the experience of the pandemic (Tallacchini, 2021; Tavernaro, 2021), failure to do so is likely to lead, over time, to the erosion of citizens' trust and lack of uptake of the required public health interventions.

Moreover, the above analysis points to the limitations of governance models rooted in a one-size-fits-all, 'techno-solutionist' logic (Marelli *et al.*, 2022), which tend to erase contextual factors and marginalize other values, policy rationales, and alternative scientific understandings of the problem at stake. Notably, in the case of the GP, the dominant narrative and rhetoric around

the 'protection' afforded by Covid-19 vaccines have failed to acknowledge – and tended to conflate – multiple meanings (from self-protection from contagion to self-protection from the worst outcomes of the disease and to protection from onward transmission of the virus). Also unacknowledged have been the different values at stake in vaccine uptake (e.g. self-protection versus collective-protection). (On the multiplicity of values informing Covid-19 vaccination, see also Paul *et al.*, 2022 and Zimmermann *et al.*, 2023). This lack of acknowledgement has put the government on a rigid and pre-determined course of action, with limited possibilities for adaptive policymaking (Olsson *et al.*, 2006; Kuhlmann *et al.*, 2019). In fact, I contend, the latter would have been warranted especially when the limits of a strict GP policy emerged in plain sight, with high rates of infections accompanied by widespread social tensions during the diffusion of the Omicron variant in late 2021. Instead, the one-sided, narrow framing of Covid-19 vaccines as the panacea for the pandemic crisis, and of critics of the government's policies as 'anti-vaxxers' holding anti-solidaristic stances, has severely constrained policy options. After all, the pursuit of alternative policy paths would have entailed a conspicuous (and politically embarrassing) reversal of previously taken-for-granted narratives.

Conclusions

In this article, I have outlined the main policy developments around the GP in the EU and Italian context. I also traced the normative and scientific reasonings that have sustained its introduction and progressive extension. As the measure turned into a highly controversial issue, I discussed how the public discourse was structured by recourse to competing framings for conceptualizing key issues at stake in the GP requirement and evaluating the development of policies (Table 1).

Building on the notion of co-production (Jasanoff, 2004), I further established how, in the public debate, normative and epistemic rationalities aligned to sustain diverging normative arguments around the GP and to stabilize distinct scientific understandings on the effectiveness of Covid-19 vaccines. Notably, co-production as an analytical tool illuminated how, on both sides of the debate, arguments on the normative legitimacy (or lack thereof) of the GP as a tool to preserve (or conversely coerce) social movement and freedoms in times of a pandemic were based on, and at the same time consolidated, distinct understandings on emerging scientific evidence on Covid-19 vaccines. For advocates of the GP, evidence pointing to the effectiveness of Covid-19 vaccines in reducing individual infections, hospitalizations and deaths shored up the limitations entailed by the GP. Conversely, for critics, the 'evidence that mattered' was the one on the waning immunity of Covid-19 vaccines specifically regarding onward transmission of the SARS-CoV-2 virus in its different variants, which undermined the evidentiary basis on which the GP was premised.

In turn, these distinct understandings of scientific evidence built on, and reinforced, competing frames as to the values informing Covid-19 vaccination, conceived as either a form of collective protection predicated on mutual solidarity (*social value* of Covid-19 vaccination), or an act of autonomous self-protection (*individual value* of Covid-19 vaccination).

From a theoretical standpoint, the case of the Italian GP stands to advance STS scholarship on co-production by investigating the role of discursive practices in legitimizing, or conversely contesting, modes of public health governance and scientific authority, notably during a global public health emergency (Jasanoff *et al*., 2021). Building on STS scholarship on scientific governance (see, e.g. Irwin, 2008), my argument underscored how the different stances vis-à-vis this policy's normative legitimacy and epistemic soundness exposed distinct visions as to the articulation of mutual rights and obligations between citizens and the state. It also accounted for the implications of the government's public health governance and intervention in terms of their perceived effectiveness and political legitimacy.

Notes

1. It is beyond the scope of this paper to provide a detailed characterization of the populations articulating arguments in support of and opposition to the GP. At a general level, it is possible to observe general support of the GP from the Italian population, with roughly two-thirds supporting it. Those in favor of the GP prevailed among all electorates but to a lesser extent in those supporting right-wing parties (Pagnoncelli, 2021). In the public discourse, both advocates and critics of the GP could be found within the same social group (e.g., political parties, those sharing similar intellectual orientations). While most prominent among conservative circles, criticisms of the GP cut across the traditional left and right spectrum (e.g., major critics of the GP were prominent intellectuals historically close to the left).
2. Two limitations of this approach should be acknowledged. First, findings obtained through opportunistic or emerging sampling can be useful for 'synthesizing a research area which is at its exploratory stage' (Suri, 2011, 71). Yet they lack the systematic nature of those obtained through, for example, systematic qualitative reviews (Booth, 2001). Second, studying online debates requires being attentive to the specific challenges they pose, such as a sudden content change without any notice from the external observer (Brandmayr, 2021).
3. 'Gentle push' is a term directly borrowed from the work of Thaler and Sunstein (2008). In Thaler and Sunstein's classic definition, the 'gentle push,' or nudge, amounts to 'a form of choice architecture that changes the behavior of people in a predictable way without forbidding any other options' (Thaler and Sunstein, 2008, 6). Nudging, in other words, does not reduce or eliminate options but rather orders 'choice architecture' in a way that favors specific options over others. While detailed arguments of whether the Green Pass can be subsumed within the 'nudging' category are presently lacking, a number of scholars from different backgrounds have explicitly referred to the Green Pass as a 'nudging measure' to incentivize vaccinations (see e.g., Spitale et al., 2022; Spinsanti, 2021). As contended in a more nuanced fashion (Leone, 2022), in the first phases of its application, where an alternative to vaccination

(namely testing) was in place, the Green Pass could be said to amount to a form of nudging; whereas, upon the introduction of the 'reinforced Green Pass' based on vaccination or recovery certificates only (see Annex 1), this instrument took the shape of overt state obligation. Yet, other legal scholars have questioned whether this measure represented, since the beginning, a form of 'advice' or, in fact, an 'obligation' (Ainis, 2021). As discussed in this article, the underlying question of whether this instrument was actually conducive to providing incentives (without constraining personal choice), or to surreptitiously introducing obligations, was *itself* at stake in public debates, with proponents and critics of this policy tool taking largely opposite sides on the issue.

4. According to official data collected by the 'Our World in Data' project, a partnership between the Global Change Data Lab and the University of Oxford, Italy has consistently been among the top 6/8 EU countries for the number of vaccine doses administered per 100 people, during the 1 August – 31 December 2021 timespan. See: https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=2021-12-31&facet=none&pickerSort=desc&pickerMetric=total_vaccinations_per_hundred&Metric=Vaccine+doses&Interval=Cumulative&Relative+to+Population=true&Color+by+test+positivity=false&country=AUT~BEL~BGR~CYP~CZE~DEU~DNK~ESP~EST~FIN~FRA~GRC~HRV~HUN~IRL~ITA~LTU~LUX~LVA~MLT~NLD~POL~PRT~ROU~SVK~SVN~SWE~EuropeanUnion
5. All webpages were last accessed on January 15, 2022, unless stated otherwise.

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Appendix 1. Overview of policy developments in Italy around the 'Green Pass' (timeframe: April – December 2021)

Legislative Act	Description	Requirements for obtaining the certification	Activities for which the certification is required[1]
Law Decree 22 April 2021, n. 52 'Decreto riaperture'	Introduction of the Green certificate (*Certificazione verde*, the 'Green Pass')	Completion of the vaccination cycle (6 months validity)Recovery from the disease (6 months validity)Molecular or rapid antigen test (48 hours validity)*Note: Certifications issued in the Member States of the European Union are recognized as equivalent, as are those issued in a third country following a vaccination recognized in the European Union.*	Moving in/out of 'orange' and 'red' zones[2]. Stricter movement restrictions apply to those not holding the certification.Accessing specific fairs, conferences and congresses in yellow zones (in case stricter guidelines be applied to such events)Accessing specific public shows and sporting events in yellow zones (in case stricter guidelines be applied to such events)
Law 17 June 2021, n. 87 (Conversion into law, with amendments, of Law Decree 22 April 2021, n. 52)	Limited extension of the Green certificate to some leisure and health and care activities	In addition to the above, vaccination with one dose (validity until the date scheduled for the completion of the full vaccination cycle)	As above, in addition:Attending private celebrations (e.g. caterings, banqueting) after civil or religious ceremonies, in 'yellow' zonesFor carers of non-Covid patients, accessing waiting rooms in emergency wards within healthcare and social health facilities (access otherwise prohibited)For long-term patients, temporary exiting healthcare and social health facilities
Law Decree 23 July 2021, n. 105	First major extension of the Green Pass to leisure activities, as of 6 August 2021[3]	In addition to the above, vaccination with one dose, after a prior infectionThe validity of the certificate upon completion of vaccination cycle is extended to 9 months	Extended nationally (i.e. also in 'white' zones) for the following (mostly) leisure activities: Indoor restaurants and catering services;Public shows; Sporting events and competitions;Museums and other types of exhibitions; Indoor sport activities;Festivals and fairs, conferences and congresses;Spas, theme and amusement parks;Indoor activities of cultural centers, social and recreational centers, with the exception of educational centers for children, summer centers and related catering activities; Gaming rooms, betting rooms, bingo halls and casinos;Public competitions .*Note: Owners and managers of such activities are tasked with ensuring compliance to this provision*
Law Decree 6 August 2021, n. 111	Second major extension of the	As above.	As above, in addition:Accessing education facilities by the staff

(*Continued*)

Continued.

Legislative Act	Description	Requirements for obtaining the certification	Activities for which the certification is required[1]
	Green Pass to the education and transport sectors, as of 1 September 2021		of the national education and university system, as well as university studentsAccessing long-distance public transport (except for local and regional mobility): e.g. flights, trains, ferries, buses, etc.*Note: School principals and those in charge of providing education services, and transport carriers, are tasked with ensuring compliance to this provision*
Law Decree 10 September 2021, n. 122	Further extension of the Green Pass in the education sector, and introduction of vaccine mandate for social health workers	As above	As above, in addition:Accessing education facilities (including different types of education facilities run by Provinces and Regions, as well as university-level facilities) by anyoneA vaccine mandate is introduced for workers of residential, social welfare and social health structures
Decree of the Presidency of the Council of Ministers (DPCM), 10 September 2021	Administrative decree introducing streamlined (digital) means to verify possession of the Green Pass in the education system	N/A	N/A
Law 16 September 2021, n. 126 (Conversion into law, with amendments, of Law Decree 23 July 2021, n. 105)		The validity of the certificate upon completion of vaccination cycle is extended to 12 months	
Law Decree 21 September 2021, n. 127.	Third major extension of the Green Pass to all public and private sector workers, as of 15 October 2021	Recovery from the disease after first vaccine dose (12 months validity), in addition to the above	Accessing all public and private sector workplaces (including Courts, and other constitutionally relevant bodies)*Note: workers not in possession of the Green Pass are considered on an unjustified absence, and left without salary or any other form of remuneration*
Decree of the Presidency of the Council of Ministers (DPCM), 12 October 2021	Administrative decree defining provisions concerning access to public workplaces, pursuant to LD 127/ 2021	N/A	The DPCM provides guidelines for checking possession of Green Pass by anyone accessing public administration workplaces, aside from service users.
Law Decree 26 November 2021, n. 172.	Introduction of the 'Reinforced Green Pass' (based on vaccine or recovery certificates only) different from 'standard green pass'	The validity of the certificate upon completion of vaccination cycle is reduced to 9 monthsValidity of testing: Molecular test	Green pass certification is mandatory for accessing: hotels, changing rooms for sports activities, local and regional public transports.In white zones:Reinforced green pass is mandatory for accessing indoor bar and

(*Continued*)

Continued.

Legislative Act	Description	Requirements for obtaining the certification	Activities for which the certification is required[1]
	(based on tests results)	(72h validity), antigenic test (48h validity)	restaurants, indoor public shows and music festivals, sport competitions, and parties.'Standard' green pass is mandatory for accessing public transports, ski resorts, public and private sector workplaces, universities, residential, social welfare and social health structures, hotels, indoor sports activitiesGreen pass is not required for accessing shops and malls, public offices, high schools (for students only), outdoor restaurants and standing service, outdoor sport activitiesIn yellow and orange zones some of the activities listed above are restricted. Only reinforced green pass holders are not subjected to any limitations. *Note: A vaccine mandate is introduced for public defence, police, first aid, and prisons personnel. Vaccination campaign is extended to everyone above 12 years old.*
Law Decree 24 december 2021, n. 221	Law Decree that extends the national state of emergency until 31st of March 2022and reduces the Covid-19 certifications validity.	The validity of the certificate upon completion of vaccination cycle is reduced to 6 months	As above
Law Decree 30 december 2021, n. 229	Extension of the Reinforced Green Pass	As above	Reinforced green pass is required for accessing:Regional and local public transportsHotelsFestivals, conventions, partiesOutdoors restaurantsOutdoors sport activities and swimming pools

[1]Unless waivers are in place, e.g. for citizens excluded by age from the vaccination campaign or exempted by it on the basis of suitable medical certification.

[2]Law Decree 16 May 2020, n. 33 introduced a tiered system of containment measures (i.e. white – yellow – orange – red zones), based on the severity of the pandemic as measured by a number of indicators, with progressively stricter measures applying.

[3]The end of validity of the provisions enacted in this and subsequent decrees is bound to the persistence of the national state of emergency (31 December 2021, later extended to 31 March 2022).