Vaccine certificates: does the end justify the means?

As COVID-19 vaccination programmes proceed in many countries, governments worldwide are considering issuing so-called vaccine certificates to facilitate the re-opening of their stumped economies by easing some restrictions for individuals who have been vaccinated against SARS-CoV-2. But are such certificates justified? Are they likely to be useful? And, most importantly, are they fair?

The assumption underlying the use of COVID-19 vaccine certificates is that vaccination not only protects individuals from disease, but also reduces their risk of becoming infected and spreading the virus. Under this assumption, vaccinated individuals could resume activities that entail social interactions and international travel without substantially contributing to onward transmission of SARS-CoV-2 within their community or abroad. On this basis, the USA and Israel have changed their behavioural recommendations for vaccinated individuals.

Israel, which has already given at least one dose of COVID-19 vaccine to over half of its adult population, deployed a vaccine certificate, the so-called green pass, in late February. Holders of a green pass can go to venues that remain inaccessible to unvaccinated individuals (eg, theatres, concert halls, and indoor restaurants and bars) and will be allowed unrestricted travel to Greece, following an agreement between the two countries. In the USA, according to new recommendations of the Centres for Disease Control and Prevention published on March 8, vaccinated individuals are allowed to mingle indoors among each other without wearing masks or maintaining physical distance, and can also do so with a restricted number of unvaccinated people, provided they are at low risk of severe COVID-19.

However, the effect of vaccination on the transmission of SARS-CoV-2 has not been reliably elucidated yet. Preliminary reports from Israel, the UK, and the USA suggest that the Moderna and Pfizer-BioNTech vaccines could reduce SARS-CoV-2 transmission either by lowering the viral load in post-vaccination infections or by preventing asymptomatic infections as well as disease. But until these data have been peer-reviewed and their validity confirmed, uncertainty will remain around the epidemiological utility of relying on vaccine certificates to re-open economies.

On these grounds, WHO recommends against the introduction of COVID-19 vaccine certificates for international travel. Nonetheless, it has established a Smart Vaccination Certificate working group, primarily to define what security standards certificates should meet. Security should undoubtedly be the foundation of vaccine certificate development, to guarantee users are protected from data misuse, falsification, and breaches of personal and health data privacy. But there are other considerations to be made.

Unknowns about the duration of vaccine-induced immunity and the risk of new SARS-CoV-2 variants with full vaccine-escape capabilities emerging raise questions about the validity period of vaccine certificates and the logistics of ensuring holders remain immune to circulating viral strains.

From a societal standpoint, granting vaccine certificate bearers access to select activities, venues, or international travel would undoubtedly provide impetus to the reopening of some sectors of the economy, such as hospitality, non-essential retail, and tourism. But it also risks generating hierarchical societies in which vaccinated individuals have exclusive privileges that are denied to those who have not received the vaccine. In countries where vaccine rollout is advancing rapidly, this inequity might be resolved in few months, but elsewhere it could be protracted for longer periods. And at an international level, against the backdrop of the currently limited availability of COVID-19 vaccine doses and their inequitable global distribution, the deployment of vaccine certificates for travel will afford citizens of high-income countries greater freedom of movement than citizens of low-income and middle-income countries.

Striking a balance between supporting national economies and containing the spread of SARS-CoV-2 has been the main challenge for governments throughout the COVID-19 pandemic. It, together with principles of fairness and equity, will also need to be a key consideration in the assessment of whether to issue COVID-19 vaccine certificates. But crucially, governments must ensure they base their decision, which could have resounding societal implications, on reliable scientific evidence supporting the epidemiological utility of this tool. ■ *The Lancet Microbe*

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For more on **international approaches to COVID-19 vaccine certificates** see https://www.adalovelaceinstitute.org/project/international-monitor-vaccine-passports-covid-status-apps/

For the **US CDC's new recommendations** see https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html

For more on **data from Israel on viral transmission after vaccination** see *medRxiv* 2021; published online Feb 8. https://doi.org/10.1101/2021.02.06.21251283

For more on **data from the UK on viral transmission after vaccination** see https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3790399

For more on **data from the USA on viral transmission after vaccination** see see *medRxiv* 2021; published online Feb 27. https://doi.org/10.1101/2021.02.15.21251623

For **WHO's recommendations on vaccine certificates** see https://www.who.int/news-room/articles-detail/interim-position-paper-considerations-regarding-proof-of-covid-19-vaccination-for-international-travellers

For **WHO's Smart Vaccination Certificate working group** see https://www.who.int/groups/smart-vaccination-certificate-working-group