



The Effectiveness of International Travel Measures: What Have We Learned during the First Year of the COVID-19 Pandemic?

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As long as people have moved around the world, viruses and other infectious diseases have travelled with their hosts to find susceptible populations to infect. In response, and for almost as long, states have taken measures to restrict the movement of goods and people to prevent the introduction of infectious diseases. This tension laid the foundation for the establishment of the World Health Organization (WHO) as well as the rules that govern how countries should interact with one another during an outbreak or pandemic.¹

As signatories to the International Health Regulations (IHRs), all State Parties have agreed to follow WHO's guidance on the adoption of international travel and trade measures during public health emergencies of international concern (PHEIC). And while states may impose additional health measures on travelers, they should avoid the adoption of measures that cause "unnecessary interference with international traffic" and only use measures that are based on "evidence."² Even though WHO has yet to officially recommend the adoption of any such measures, since the start of the COVID-19 pandemic, nearly every country in the world has introduced some form of international cross-border measure, leading to unprecedented declines in trade and travel.³ Global migration flows have also been greatly adversely affected.

Initially, many experts insisted that travel measures "don't work" in preventing onward transmission, and therefore, such

measures should not be imposed—or worse, that the introduction of such measures could be counter-productive to mounting a coordinated global response.⁴ However, the near-universal adoption of such measures, as well as the ongoing use of them a full year later, suggests our beliefs over the effectiveness of such measures have shifted. As part of the [Pandemic and Borders project](#), over the last year my colleagues and I have reviewed the emergent evidence of the effectiveness of such measures and are beginning to coalesce around several important lessons learned with regards to the effectiveness of international travel measures during the COVID-19 pandemic.⁵

First, we had only incomplete evidence of the potential effectiveness of travel measures at the onset of the pandemic. The only evidence on the effectiveness of travel measures came from studies of previous infectious disease outbreaks, mainly influenza.⁶ Existing reviews generally found that if measures were implemented early, they could delay local transmission, international spread, and the peak of an outbreak—but only by a few days, a few weeks, or possibly a few months. Beyond influenza, studies from Ebola and SARS epidemics found that such measures were less effective in those contexts.⁷ As such, it was widely believed that the benefits of imposing such measures were small relative to their large negative social and economic effects. However, previous reviews were based on only a small number of relatively low-quality studies and few evaluated measures on a scale closer to the

reality of the current pandemic. Also, since the onset of this pandemic, it has become clear that the clinical features of COVID-19 make it much more challenging than other viruses to contain, especially the large proportion of cases that are asymptomatic but account for substantial transmission.⁸ As such, evidence from previous studies did not generalize well to the current pandemic.⁹

Second, we have learned that while travel measures may not completely stop COVID-19 from entering a country, they can still help shape national epidemics beyond the initial containment phase. While some countries imposed travel measures early (e.g., Taiwan and Vietnam) and did not see substantial early local transmission, others have also benefited from such measures after they managed to get their initial outbreaks under control (e.g., New Zealand and Hong Kong) largely by helping them to sustain their national responses. No country that has either eliminated or nearly eliminated the virus within its borders during the first year of the pandemic has done so without robust international travel restrictions. Even within countries, we have seen some states or provinces benefit from the imposition of sub-national travel measures (e.g., the Atlantic provinces of Canada and Australia).

Third, geographically or politically targeted measures are less effective than universal measures because it is difficult to predict the dynamics of a fast-moving pandemic. Early on, most travel measures were targeted at China, but these soon became less effective when other countries became the primary exporters of the virus.¹⁰ Many countries have selectively adopted travel bans for non-citizens or people coming

from “high-risk” countries but permit citizens from these same locations to travel home without testing and quarantine requirements upon arrival. Viruses do not respect citizenship; thus, travel measures that are not based mainly upon measures of risk are likely to be less effective.

Finally, regardless of how effective international travel measures have been, no country has managed to control its outbreak without also having robust domestic control measures. International travel measures may be necessary, but they are far from sufficient to control a national outbreak. A focus on international travel restrictions can also distract from domestic measures so there is a need to think about how both international and domestic measures can be better integrated into a comprehensive national strategy.

Given that many countries continue to perceive benefit from these measures, despite their enormous economic and social consequences, a key challenge will be to learn how and when to relax such measures. I believe at least three conditions will be needed for countries that have relied heavily upon such measures to relax them. First, a large proportion of the domestic population will need to have acquired immunity to the virus, either naturally or through vaccination. However, few countries will be able to fully vaccinate enough of their population to reach such levels in the first half of 2021. Second, countries may be reluctant to welcome travellers from countries that have not made similar levels of effort into controlling their national outbreaks. For this reason, I believe that will likely see many bilateral arrangements (i.e., travel bubbles) rather than widespread relaxation of such measures in the medium term. Finally,

countries must also trust that the vaccines given to travelers will protect against transmission, which requires a shared belief about which vaccines are sufficiently effective as well as a method to validate the administration of the vaccines. Such so-called “vaccine-passports,” while theoretically compliant with the IHRs, pose an enormous additional technological burden on countries that have prioritized the rapid rollout of vaccines above and beyond the proper documentation of such efforts.

In short, while some countries have benefited from travel measures, not all have, and it is clear that the global community has become more fragmented as a result. Had the world reacted more uniformly aggressively in early 2020, it is possible that such measures may not have been warranted. However, of great concern is that the use of such measures has now become normalized and will likely play a larger role in all future outbreaks. The world needs a better understanding of when and in which contexts such measures may be effective to minimize the unnecessary interruption of trade and travel in the future and a strengthened IHR framework to provide better guidance to countries on the use of such measures.

Endnotes

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