Medical Xpress

Effectiveness of travel bans—readily used during infectious disease outbreaks—mostly unknown, study finds

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Because of the quick and deadly outbreak in late December of a novel coronavirus in Wuhan, China, now known as COVID-19—infecting tens

of thousands and killing hundreds within weeks, while spreading to at least 24 other countries—many governments, including the United States, have banned or significantly restricted travel to and from China.

And while travel bans are frequently used to stop the spread of an emerging infectious disease, a new University of Washington and Johns Hopkins University study of published research found that the effectiveness of travel bans is mostly unknown.

However, said lead author Nicole Errett, a lecturer in the UW Department of Environmental & Occupational Health Sciences in the School of Public Health, that's largely due to the fact that very little research into the effectiveness of travel bans exists.

"Some of the evidence suggests that a travel ban may delay the arrival of an infectious disease in a country by days or weeks. However, there is very little evidence to suggest that a travel ban eliminates the risk of the disease crossing borders in the long term," said Errett, co-director of the ColLABorative on Extreme Event Resilience, a research lab focused on addressing real-world issues relevant to community resilience.

The researchers combed through thousands of published articles in an effort to identify those that directly addressed travel bans used to reduce the geographic impact of the Ebola virus, SARS (Severe Acute Respiratory Syndrome), MERS (Middle East Respiratory Syndrome) and the Zika virus. They did not include studies of influenza viruses, for which travel bans have already been shown to be ineffective in the long term.

In the end, the researchers were able to identify just six studies that fit their criteria. Those six were based on models or simulations, not data from actual bans after they were implemented, to assess the effectiveness of travel bans in controlling outbreaks. Consequently, to

improve research in this area, the study authors recommend that research questions, partnerships and study protocols be established ahead of the next outbreak so empirical data can be collected and assessed quickly.

"Travel bans are one of several legal options that governments have drawn on to mitigate a pandemic," said co-author Lainie Rutkow, a professor of health policy and management at Johns Hopkins Bloomberg School of Public Health. "As coronavirus spreads, our study raises the importance of understanding the effectiveness of legal and policy responses intended to protect and promote the public's health."

"When assessing the need for, and validity of, a travel ban, given the limited evidence, it's important to ask if it is the least restrictive measure that still protects the public's health, and even if it is, we should be asking that question repeatedly, and often," said co-author Lauren Sauer, an assistant professor of emergency medicine at Johns Hopkins University's School of Medicine and director of operations with the university's Office of Critical Event Preparedness and Response.

Consequently, the authors write, additional research is "urgently needed" to inform policy decisions, especially in light of the tremendous social, economic and political impacts of their implementation.

More information: Nicole A. Errett, PhD, MSPH et al, An integrative review of the limited evidence on international travel bans as an emerging infectious disease disaster control measure, *Journal of Emergency Management* (2020). DOI: 10.5055/jem.2020.0446

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