Travel restrictions and evidence-based decision making for novel epidemics

To the Editor: Travel restrictions to control the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes coronavirus disease 2019 (COVID-19), were rapidly implemented in Australia. Despite its apparent efficacy, this proactive approach has been criticised as unscientific and in breach of the International Health Regulations. A recently published comment[1] claimed that travel restrictions were implemented without supporting scientific evidence and had "been challenged by public health researchers", citing research on Ebola and influenza. However, their interpretation is not consistent with an evidence-based approach. When managing a novel infection, evidence-based decision making should (i) use the best available relevant information that is generalisable to the novel infection — for example, an infection with a similar route of transmission; that is, not Ebola, but rather severe acute respiratory syndrome (SARS), influenza, and Middle East respiratory syndrome (MERS) — and (ii) clearly define the outcome of interest (eg, prevention *v* delay). A recent review[2] of travel restrictions for emerging infectious diseases, including SARS and MERS, found only one study regarding coronaviruses. The evidence identified supports the use of air travel bans to prevent the spread of coronavirus epidemics.[2] Furthermore, systematic reviews,[3–5] including the review[4] cited in the comment,[1] have reported that travel restrictions delayed, but did not prevent, the spread of influenza.[3,4] These delays were up to 4 months,[4] and up to 10 months if implemented in combination with other local strategies.[5] At the start of the COVID-19 pandemic, this reflected the best available evidence to make evidence-based decisions regarding travel restrictions. The evidence suggests that travel restrictions may, therefore, be used to delay and attenuate the peak in case numbers to reduce the burden on the health system, allowing for preparations to be made to better manage the outbreak. The preparation measures may include upskilling the health care workforce, building new facilities, improving access to laboratory testing and ventilators, and stockpiling personal protective equipment. This is the primary goal of travel restrictions as public health interventions. We conclude that Australia's rapid introduction of travel restrictions is consistent with an evidence-based approach that prioritises the precautionary principle and saving lives.

Jessica Stanhope*
Philip Weinstein*

University of Adelaide, Adelaide, SA.

Philip.Weinstein@adelaide.edu.au

Competing interests No relevant disclosures. ■

*Equal first authors.

The unedited version of this article was published as a preprint on mja.com.au on 28 July 2020.

doi: 10.5694/mja2.50803

References are available online.

1 Habibi R, Burci GL, de Campos TC, et al. Do not violate the International Health Regulations during the COVID-19 outbreak. *Lancet* 2020; 395: 664–666.
2 Errett NA, Sauer LM, Rutkow L. An integrative review of the limited evidence on international travel bans as an emerging infectious disease disaster control measure. *J Emerg Med* 2020; 18: 7–14.
3 Ryu S, Gao H, Wong JY, et al. Nonpharmaceutical measures for pandemic influenza in nonhealthcare settings — international travel-related measures. *Emerg Infect Dis* 2020; 26: 2298–2299.
4 Mateus ALP, Otete HE, Beck CR, et al. Effectiveness of travel restrictions in the rapid containment of human influenza: a systematic review. *Bull World Health Organ* 2014; 92: 868–880D.
5 Lee VJ, Lye DC, Wilder-Smith A. Combination strategies for pandemic influenza response - a systematic review of mathematical modeling studies. *BMC Medicine* 2009; 7: 76. ■