



Short Communication

Emergence potential of monkeypox in the Western Pacific Region, July 2022

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ABSTRACT

Although new cases of monkeypox have been expected in the Western Pacific Region (WPR) since the virus emerged in Europe earlier this year, there have been only a few reported cases across the WPR (New Zealand 2, Singapore 6, South Korea 1, Taiwan 2), other than a limited number of cases (compared to numbers of cases seen elsewhere in the world) in Australia (33), as of July 15, 2022. In our short communication, we highlight two key reasons for this: i) international travel has still not fully resumed in the WPR following the COVID-19 pandemic, and ii) local public health measures to counter the spread of COVID-19 have not been completely relaxed. We provide supporting evidence for both of these reasons.

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The recent emergence of monkeypox (MPX) in humans in European countries and its spread to more than 80 countries worldwide (as of July 15, 2022) is of great concern for global public health (Haider et al., 2022). More than 95% of cases reported so far have been individuals who identify as male, with a disproportionate number of cases in men who have sex with men (MSM). This is perhaps surprising, as no previous evidence of sexual transmission of MPX exists. However, the virus is believed to be transmitted through close contact, which includes sexual contact (Antinori et al., 2022).

Many regions of the world are highly connected by international travel, despite interventions introduced to combat the COVID-19 pandemic. The Western Pacific Region (WPR) has therefore been anticipating imported cases of MPX since its emergence in Europe in May 2022. If the current trend of substantial numbers of cases among MSM continues, Taiwan might expect to be among the first locations in the region to detect substantial numbers of infections. Taiwan granted equal rights to the Lesbian, Gay,

Bisexual, Transgender, Queer/Questioning, and Intersex (LGBTQI+) community in the 2010s and is one of the most progressive locations in Asia in this respect. It also recently increased surveillance for MPX cases. However, as of July 15, 2022, there are only a few reported cases across the WPR (New Zealand 2, Singapore 6, South Korea 1, Taiwan 2), other than a limited number of cases (compared with the numbers of cases elsewhere in the world) in Australia (33) (Kraemer et al., 2022).

While additional cases will inevitably occur going forwards, we contend that there are two key factors contributing to the relatively small number of cases in the WPR so far. First, many countries in the WPR have maintained some COVID-19 travel restrictions. Most countries have only partially opened their borders for international travel, and have permitted only travelers with residence cards or those traveling for business, education, or health purposes to enter. For instance, Japan increased its cap on the total number of eligible travelers entering the country from 10,000 per day to 20,000 per day only recently and has only just allowed tourists to enter. Taiwan has announced plans to allow international travelers to enter, but a ban on foreign nationals entering Taiwan remains in place. The strictest border controls in the region were imposed by Mainland China, which implemented a zero-COVID policy. In contrast, New Zealand and Australia (the locations with most detected MPX cases in the WPR) have already opened their borders. Overall, only around a 50% resumption of the travel volume compared with pre-COVID levels has been observed across

Abbreviations: Monkeypox, MPX; Western Pacific Region, WPR; Men who have Sex with Men, MSM; Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, and Intersex, LGBTQI+; European Union or European Economic Area, EU/EEA.

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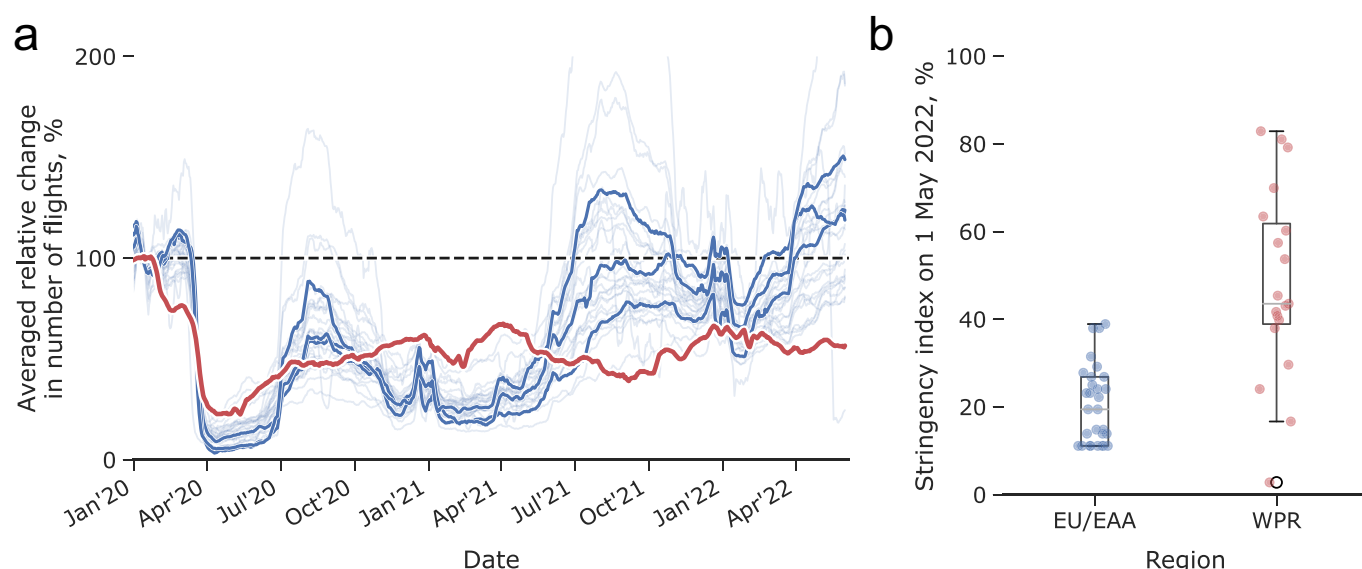


Figure 1. (a) The change in the number of flights for a given national flight zone relative to the referral average (a 2-week period from January 6–20, 2020, before COVID-19 travel restrictions). Results are smoothed over a 7-day window to allow trends to be observed clearly. Blue lines represent countries in the EU/EAA, and the red line represents the analogous value for the entire Asia/Pacific region (Schäfer et al., 2014; Lübke, 2022). Thick blue lines represent the three countries with the highest cumulative reported case counts of MPX by June 4, 2022 (UK, Spain, and Portugal). (b) Public health measure stringency indices on May 1, 2022, for countries in the EU/EAA and the WPR (Hale et al., 2021).

EU/EAA = European Union/European Economic Area; MPX = monkeypox; WPR = Western Pacific Region.

the WPR (Figure 1a). Although all countries recognize the need to lift international travel restrictions for economic and societal reasons, many still take a cautious approach.

Second, many countries in the WPR have maintained advice promoting good public health practices introduced during the COVID-19 pandemic. Although the general decline in disease severity associated with COVID-19 infections during the pandemic (for reasons including widespread vaccine deployment) has allowed measures to be relaxed, some restrictions have been maintained in many countries in the WPR compared with elsewhere (Figure 1b). For example, Japan abandoned its priority preventive measures in late March 2022 but continues to ask the public to follow the so-called '3Cs' (*sanmitsu*) principle (Oshitani, 2022). In addition, the Japanese government recommends individuals avoid environments in which close contact is inevitable, such as crowded venues. A surge of COVID-19 cases in Taiwan in May 2022 because of the Omicron variant forced the government to continue to impose public health measures similar to *sanmitsu* (Summers et al., 2020). Such measures inevitably limit the risk of transmission of MPX if importations occur because they reduce the number of close contacts between individuals.

Although there have been few reports of MPX infections in all WPR countries (besides Australia, where there have now been more than a few), countries throughout the region are beginning to reopen their borders to travelers. While the MPX outbreak is unlikely to be as severe as the COVID-19 pandemic, for reasons including the relatively limited amount of asymptomatic transmission expected for MPX compared with COVID-19 (for which both presymptomatic and asymptomatic transmission occurs; Lovell-Read et al., 2021), unreported chains of transmission may still arise. To minimize the risk of large outbreaks, it is crucial that no affected communities are stigmatized, in part because this may reduce the likelihood of infected individuals reporting disease. Governments should take measures to increase risk awareness and develop educational campaigns. Widespread risk awareness and education will help public health authorities prevent localized outbreaks and minimize the risk to individuals. This is essential in locations across the WPR where new cases are anticipated.

Several academic research groups have projected the future incidence of MPX worldwide and in specific regions, predicting many more cases by the end of 2022 (Chinazzi et al., 2022; McAndrew et al., 2022). However, the epidemiological models that have been applied have not accounted for changing future patterns of international travel. The reopening of borders across the WPR will alter the international travel network. In addition, governments may organize events or change policies to attract tourists. Future modeling studies accounting for such changes and assessing the wide range of possible scenarios are needed to generate more accurate projections and improve risk assessments for countries in the WPR and elsewhere. This is of clear public health importance.

Ethical approval

The present study used publicly available data and so did not require ethical approval.

Author contributions

A.R. Akhmetzhanov: Conceived and designed the analysis, Performed the analysis, Discussed the results, Wrote the manuscript - original draft, Reviewed and edited the manuscript. L. Ponce: Discussed the results, Reviewed and edited the manuscript. R.N. Thompson: Conceived and designed the analysis, Discussed the results, Wrote the manuscript - original draft, Reviewed and edited the manuscript.

Declaration of Competing Interest

The authors have no competing interests to declare.

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