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# Bhutan's preparedness for monkeypox outbreak

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The World Health Organization (WHO) declared monkeypox as a public health emergency of international concern (PHEIC) on 23 July 2022. As of 5 September 2022, 102 countries had reported 52,996 cases with 18 deaths globally and 18 cases with one death in the South-East Asia Region (SEAR).<sup>1</sup> All 18 cases in SEAR are confined to three countries: Thailand (7), India (10), and Indonesia (1). Bhutan – a landlocked country in Asia – has not reported any cases of monkeypox.

Bhutan will reopen its international borders in September 2022 and the number of people entering and exiting the country is expected to rise sharply with an influx of tourists and rampant travel for trade and business. Tourism was the second biggest source of national revenue before the borders were closed in March 2020 due to COVID-19. The country shares over 700 km of porous land border with India, which is also its biggest trading partner; people of both countries are permitted to cross the border freely for trade. India reported its first case of monkeypox in July 2022<sup>2</sup> and has since reported 10 confirmed cases as of 5 September 2022. These cases were reported across five states: Bihar, Delhi, Kerala, Telangana, and Uttar Pradesh. Two of these states (Bihar and Uttar Pradesh) are within 500 km of Bhutan's border while Delhi has a direct flight to Paro, Bhutan. Bhutan also has trade links and direct air transport connectivity with Thailand and three other SEAR countries: Bangladesh, Nepal and Singapore. The country is therefore at high risk of encountering imported cases of monkeypox.

An outbreak of monkeypox would pose several new challenges to the country's recovering health infrastructure and economy. Significant fomite transmission of monkeypox would require additional precautions to prevent transmission through imported goods. This could hinder free trade and economic recovery. The long "window of infectiousness" may preclude implementing strict facility quarantine requirements for travelers. Similarly, unlike COVID-19, enforcing "lockdowns" as a measure to prevent outbreaks is unlikely to be

effective against monkeypox transmission. Without an effective vaccine, the country's vulnerable population remains at risk. The country could be forced to implement its "reverse isolation" policy: isolating the most vulnerable individuals in facility quarantine to protect them.<sup>3</sup> There is stigma associated with monkeypox due to the reportedly higher incidence among men who have sex with men (MSM) and/or sexual transmission.<sup>4</sup> This may deter health seeking behaviour and delay detection. Other challenges include fatigue to public health emergencies, a vulnerable economy, and lack of experience and knowledge of health professionals in managing monkeypox in addition to limited diagnostic capacity.<sup>5</sup>

Bhutan provides free medical services to its entire population. There are no private hospitals in the country although a few private "diagnostic centres" provide basic testing facilities. The country's state-run hospitals are categorized at three tiers: primary (20-bedded hospitals, primary health centres), secondary (district & general hospitals) and tertiary (two regional referral hospitals and a national referral hospital). As of January 2022, the country had 279 doctors, 1608 nurses and 2285 other health practitioners (pharmacists, dental surgeons, physiotherapists, laboratory personnel, imaging technicians, etc).<sup>6</sup> Bhutan's Ministry of Health announced a series of measures to prevent, or respond rapidly to, an outbreak of monkeypox.<sup>7</sup> The Ministry implemented mandatory declaration forms for all incoming travelers returning from affected countries. It released its national clinical management guidelines for monkeypox in June 2022. Monkeypox is now a notifiable disease to be reported through its existing disease surveillance system – National Early Warning, Alert Response Surveillance (NEWARS). Through the NEWARS portal, all health facilities in the country submit real-time and/or periodic reports to the Royal Centre for Disease Control (RCDC) in Thimphu.

Several upgrades and changes initiated to the health system in response to COVID-19 could aid in responding to an outbreak of monkeypox. The national, regional and local task forces instituted during COVID-19 could be swiftly re-activated. Any need for personal protective equipment (PPE) can be addressed rapidly: the Ministry of Health has gained experience in arranging supply and has leftover stock of PPE, and all health personnel are familiar with its use. Critical health infrastructures were upgraded: new makeshift hospitals and additional ICU beds

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were set up across the country and existing hospitals upgraded with new equipment.

In conclusion, Bhutan faces a high risk of monkeypox outbreak as it re-opens its borders. The country advocates a policy of “lives before livelihood” and would probably emphasize preventing morbidity and mortality from monkeypox at all costs. Bhutan has the potential to overcome challenges posed by an outbreak if interventions are proactively implemented.

### Contributors

STT and TD conceived, drafted, critically reviewed and approved the final manuscript.

### Declaration of interests

All authors declare no conflicts of interest.

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### References

- 1 Multi-country outbreak of monkeypox, External situation report #5–7 September 2022. <https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox-external-situation-report-5-7-september-2022> Accessed 19 September 2022.
- 2 Yadav PD, Reghukumar A, Sahay RR, et al. First two cases of Monkeypox virus infection in a traveller returned from UAE to India, July 2022. *J Infect.* 2022. <https://doi.org/10.1016/j.jinf.2022.08.007>.
- 3 Reverse isolation facilities established in all 20 dzongkhags | Kuen-sel Online. <https://kuenselonline.com/reverse-isolation-facilities-established-in-all-20-dzongkhags/>. Accessed 25 August 2022.
- 4 Thornhill JP, Barkati S, Walmsley S, et al. Monkeypox virus infection in humans across 16 countries - April-June 2022. *N Engl J Med.* 2022;387:679–691.
- 5 Webb E, Rigby I, Michelen M, et al. Availability, scope and quality of monkeypox clinical management guidelines globally: a systematic review. *BMJ Glob Health.* 2022;7:e009838.
- 6 Ministry of Health. Annual Health Bulletin, 2022 [Internet]. Thimphu, Bhutan. 154-155. Available from: [http://www.moh.gov.bt/wp-content/uploads/ict-files/2022/07/Annual-Health-Bulletin-2022\\_Link-3.pdf](http://www.moh.gov.bt/wp-content/uploads/ict-files/2022/07/Annual-Health-Bulletin-2022_Link-3.pdf). Accessed 20 August 2022.
- 7 MoH prepares to stop Monkeypox and deal with outbreaks – The Bhutanese. <https://thebhutanese.bt/moh-prepares-to-stop-monkeypox-and-deal-with-outbreaks/>. Accessed 12 August 2022.