

Screening for monkeypox virus infections in men who have sex with men in a sexual health clinic in Hanoi, Viet Nam



In early 2022, an increase in mpox (formerly known as monkeypox) cases occurred in countries without previous mpox infections; there are now more than 81 000 cases reported from 110 countries.¹ Infections during the current outbreak are associated with sexual transmission and disproportionately affect gay, bisexual, and other men who have sex with men (GBMSM).¹ Approximately half of reported mpox cases are people living with HIV infection, and a large proportion of people without HIV infection are taking HIV pre-exposure prophylaxis (PrEP).¹⁻³

Asymptomatic monkeypox virus infections have been reported. A retrospective study of rectal and oropharyngeal specimens collected from 224 men in a sexual health clinic in Belgium in May, 2022, reported a 1·3% prevalence of asymptomatic infections.⁴ A retrospective study of rectal specimens among 706 men in a sexual health clinic in France found a 6·5% prevalence of asymptomatic infections.⁵ There is uncertainty about the extent to which asymptomatic infections occur and contribute to monkeypox virus transmission.

In September, 2022, there were no reported cases of mpox in Viet Nam and there was little diagnostic testing capacity. However, cases were reported in several nearby countries, leading to concern for under-detection of monkeypox virus infections in Viet Nam.¹

The objective of the current study was to establish if undiagnosed and asymptomatic mpox infections occurred in GBMSM enrolled in an HIV PrEP programme in Hanoi, Viet Nam.

The study used remnant rectal specimens, collected from July 1, 2022, to Aug 31, 2022, as part of an ongoing research study for the detection of multisite *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections. Rectal specimens were self-collected swabs placed in an Alinity m multi-collect tube (Abbott Molecular, Des Plaines, IL, USA). Specimens were stored at -20°C and were thawed before monkeypox virus testing. DNA extraction was done with DNeasy Blood and Tissue Kits (Qiagen, Germantown, MD, USA). The real-time PCR assay was done with monkeypox virus generic (G2R_G) primers and probes⁶ and LightCycler

480 Probes Master mix (Roche Diagnostics, Meylan, France) on an ABI 7500 Fast platform (Applied Biosystems, Foster City, CA, USA). Phocid herpes virus was used as an internal control for the extraction and amplification steps⁷ and synthetic monkeypox virus DNA was used as an external positive control. Specimens were considered positive if the cycle threshold value was 40 or more.

Demographic and clinical information were collected from study participants. All study participants provided informed consent for additional analyses on stored specimens and the study was approved by the Institutional Review Board at Hanoi Medical University (HMuIRB580).

In total, remnant rectal specimens from 152 participants were submitted for testing. All participants were male, reported having sex with male partners, and were taking HIV PrEP. The median age was 25·9 years (IQR 21·7–30·3). The median number of male sex partners in the previous month was 1 (IQR 1–3) and 15 (9·9%) of the 152 participants reported having group sex in the previous 6 months. In the previous 3 months, 12 (7·9%) of the 152 participants reported a diagnosis of a sexually transmitted infection.

On the day of specimen collection, 53 (34·9%) of the 152 participants reported any sexually transmitted infection symptoms in the previous week and 24 (15·8%) reported rectal symptoms. Among the rectal specimens submitted for testing, 32 (21·1%) were positive for *C trachomatis* and 23 (15·1%) were positive for *N gonorrhoeae*. All the remnant rectal specimens submitted for testing were negative for monkeypox virus.

Monkeypox virus was not detected in rectal specimens from 152 GBMSM enrolled in an HIV PrEP programme in Hanoi, Viet Nam from July 1, 2022, to Aug 31, 2022. During the study period, diagnostic testing for mpox in Viet Nam was not widely available and data on the prevalence and incidence of infections were not available. Subsequently, the first case of mpox in Viet Nam was reported on Oct 3, 2022, in a woman aged 35 years who was admitted to hospital on Sept 22, 2022, after returning from Dubai, United Arab Emirates.⁸

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Currently, there does not appear to be sustained monkeypox virus transmission within Viet Nam.

Increased testing capacity for monkeypox virus infections is needed for surveillance and disease control. The need for testing is especially important in low-income and middle-income countries where access to testing is already low.⁹ Moreover, screening for asymptomatic infections in populations at increased risk for infections can allow for early case detection and a fast response to outbreaks.¹⁰ The deployment of a diagnostic test for mpox in Viet Nam and the use of retrospective specimens allowed for the rapid assessment of undetected transmission. Based on epidemiological data, our study population of sexually-active GBMSM was at increased susceptibility for monkeypox virus infections. Therefore, monkeypox virus infections not being detected during this time is an important finding. Integrating mpox testing into settings where populations at increased risk of infections seek care can aid in surveillance efforts.

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