

Editorials

The changing face of monkeypox

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Re: The changing face of monkeypox and the seasonality of human orthopoxvirus infections

Dear Editor,

The sixth month old MPX Public Health Emergency is currently slowing, but shows increasing case reports in new populations outside of men who have sex with men (MSMs). While human infections were first identified in the Democratic Republic for Congo (Congo, Léopoldville, at the time; later, Zaire) in 1970, many aspects of MPX epidemiology remain obscure, including primary modes of transmission, and seasonality of infections in temperate climates. Understanding these closely-linked features has major import for pandemic planning and response.

The primary modes of transmission of variola (smallpox; the closest well-studied human orthopoxvirus) have never been fully elucidated but the balance of evidence suggests: "Smallpox appears to have been most effectively and virulently transmitted by fine particle aerosols and therefore should be classified as an anisotropic infection; an infection where route of transmission influences either virulence and or probability of infection, formerly called a "preferentially" airborne infectious disease."^[1]

And closely aligned with this mode of transmission is strong seasonality in temperate climates: "...a seasonal incidence similar to that of measles and chickenpox; it was mainly a disease of winter and spring."^[2] For example, historical data from New York City, and London (Fig 1, <https://osf.io/stke3>) shows clearly evident peaks in wintertime and spring, across decades of transmission in multiple geographies. The seasonality of transmission has also been quantified in other diverse settings, and was associated with ambient humidity across multiple cities in Asia and Europe.^[3] Finally, increased environmental stability of orthopoxviruses has also been associated with low humidity.^[4]

This seasonality suggests if MPX epidemiology is closely analogous to variola transmission, the observed cases in the Northern hemisphere in 2022 may represent an atypical summer wave, associated with the introduction of the virus into new populations. The global community should consider and closely monitor for a potential shift towards more "textbook" modes of transmission, potentially leading to lower transmission in the near term, followed by a "surprise" re-emergence during the Northern hemisphere winter 2022–23 or into spring 2023. Moreover, the expansion of the current outbreak to new demographic groups, including infants ^[5] may foreshadow potential low-level endemicity, in which seasonality may play an important role, in part by masking the true drivers of the current decline in cases.

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Competing interests: No competing interests

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