



## Mpox Scenario-Based Human Health Risk Assessment for the United States as of 6 February 2025 – Clade II

**Currently,\* the Center for Outbreak Response Innovation (CORI) judges the ongoing sporadic mpox infections in humans in the United States to be in Scenario 3, meaning the virus circulating in the United States is the same clade (clade IIb) that expanded globally in 2022, and cases of clade IIb are growing globally, though at a slower rate than earlier in the year. Reports of new cases have been steadily declining over the last 4 months. The increase in reported cases of IIb across Africa indicates an increased risk for heightened spread to the US.**

	Risk to MSM community	Risk to sex workers	Risk to healthcare workers	Risk to general public
Scenario 3 – Autumn Case Dropoff	Moderate	Moderate	Low	Low

Our confidence in these risk scores is **low** given the current available information globally.

See the detailed risk assessment beginning on the next page for further information. Appendices and regularly updated situation report including an epi curve available [here](#).

This judgment is based on available data from ongoing mpox case reporting to the US Centers for Disease Control and Prevention (CDC), Africa CDC, WHO, and wastewater surveillance.

To minimize the transmission of clade IIb clade in the US, CDC and WHO recommend the following:

- All individuals with an [increased risk of infection](#) should receive 2 doses of JYNNEOS vaccine.
- [Clinicians should consider mpox](#) when lesions consistent with mpox are observed in a patient, even if an alternate etiology (eg, herpes simplex virus, syphilis) is considered more likely.
- Healthcare professionals should [wear all recommended personal protective equipment \(PPE\)](#) when completing mpox testing.

*\*This document will be updated only when new information becomes available that could change our assessment.*



## Mpox Scenario-Based Human Health Risk Assessment for the United States

Center for Outbreak Response Innovation (CORI)

Updated as of 7 February, 2025

Clade 2 updates since the last update on January 8, 2025:

- Clade IIb Mpox cases in the US continue to grow, with the [US reporting](#) 34,490 cases and 63 deaths as of December 31, 2024.
- The US [National Institutes of Health \(NIH\)](#) has [determined](#) that while safe, Tecovirimat does not reduce lesion resolution time or reduce pain associated with the infection and has halted the clinical trial.
- A [MMWR from October 10, 2024](#) discussed a second cluster of mpox cases in the US that were caused by tecovirimat-resistant monkeypox virus.
- Increases in clade II cases continue to be documented across the African Continent (see details on country-specific case and death counts in the CORI mpox Situation Update, available [here](#)).

### Scenarios:

CORI has identified 3 key scenarios that may shape the risk of clade II mpox in the US for the upcoming year. These scenarios consider the health risks of clade II, taking into account the differing impacts to various population groups as clade II circulates within the US.

Features that would characterize each scenario include:

- **Scenario 1 – Baseline:** Cases of clade IIb continue to grow in the US as seen in the past 6 months
- **Scenario 2 – Autumn Surge:** Clade IIb cases surge in the US, vaccination rates remain at current rate, with only [23-37% of at-risk populations fully vaccinated](#).
- **Scenario 3 – Autumn case drop off:** Clade II cases in the US fall to pre-2024 levels, due to either reduced transmission or increased levels of vaccination among key population groups.

**\*Please note:** We are evaluating the risks to human health should each scenario occur, **not** the relative risk of any one scenario occurring. This risk assessment will be updated regularly.

**Currently, CORI judges that the ongoing sustained mpox infections in humans in the United States is in scenario 3,** meaning the virus currently circulating in the United States is the same clade (clade IIb) that expanded globally in 2022, while reports of new cases have been declining for the past 2 months.



This judgment is based on [available data](#) from ongoing mpox case reporting to CDC and [wastewater surveillance](#). As of June, 2024, the [CDC has reported](#) steady decline in new pox cases nationally and the reported cases continue to be predominately among individuals within the MSM community and who are unvaccinated or under vaccinated, indicating that the [outbreak epidemiology has remained consistent](#). [CDC also reports](#) that, except for one case in California, all patients with confirmed mpox who undergo clade testing have tested positive for [clade IIb](#). In late 2023, CDC enhanced wastewater surveillance for clade IIb, increasing testing locations to a total of 186 sites across 32 jurisdictions.

Notably, increases in cases or clusters of cases during the summer and autumn may increase the health risk posed to certain populations, as described in the scenario-based risk assessments below.

## Mpox Human Health Risk Assessment Scenario Table for the US Population

**Table 1. Clade IIb**

	Risk to MSM community	Risk to sex workers	Risk to healthcare workers	Risk to general public
<b>Scenario 1 – Baseline</b>	Low-Moderate	Low-Moderate	Low	Low
<b>Scenario 2 –Autumn surge</b>	Moderate	Moderate	Low	Low
<b>Scenario 3- Autumn decline</b>	Moderate	Moderate	Low	Low

Our **confidence** in these risk scores is **Low** given the current level and availability of information for each of these factors; historical knowledge from past outbreaks on transmission dynamics; the availability of vaccination and treatment resources; and the federally mandated CDC reporting freeze and recent administration changes at the federal, state, and local level. We have chosen to reduce our confidence score primarily due to our low confidence in the comprehensiveness of the surveillance measures and reporting at this time. Confidence levels in risk scores may return to high once CDC reporting resumes

**Methods:** The purpose of this document is to consider possible future developments in this outbreak and describe corresponding risks to human populations should a given scenario occur. In each scenario, we consider the risk to 4 distinct populations: the community of men who have sex with men (MSM), sex workers, healthcare workers, and the general public.

In determining the risks to the health of each population, we considered several factors such as primary transmission pathways, current morbidity and mortality, and the primary demographics and geographies currently affected. We also assessed the extent of the current outbreak to determine if cases are sporadic, in clusters, or if there is low or high ongoing community transmission. Other factors considered include events that could increase human-to-human transmission (eg, mass



gatherings, seasonal trends, school terms, etc.); the availability and effectiveness of treatments and vaccines; nonpharmaceutical measures to lower the risk of human-to-human transmission, such as personal protective equipment (PPE) for healthcare workers; the potential impact of animal reservoirs; and ongoing public health preparedness and response operations to address outbreaks. We use a five-tiered system to identify risk levels including: low; low-moderate; moderate; moderate-high; and high.

## Recommendations

While the US is not yet in Scenario 2 (introduction of clade I in the US), recent reports of clade I mpox cases outside of the Democratic Republic of Congo (DRC) and now in Europe indicate the potential for global spread of clade I if measures are not taken to adequately control transmission. The US should be on heightened alert for clade I introduction through travel over the coming weeks and months and should be supporting targeted studies to better understand routes of transmission and disease progression in children.

For all scenarios and to minimize the risk of imported transmission of clade I, CDC and WHO recommend:

- All individuals with an [increased risk of infection](#) should receive 2 doses of JYNNEOS vaccine.
- [Clinicians should consider mpox](#) when lesions consistent with mpox are observed in a patient, even if an alternate etiology (eg, herpes simplex virus, syphilis) is considered more likely.
- Healthcare professionals should [wear all recommended personal protective equipment](#) (PPE) when completing mpox testing.

## References

- McQuiston JH, Luce R, Kazadi DM, et al. U.S. Preparedness and Response to Increasing Clade I Mpox Cases in the Democratic Republic of the Congo — United States, 2024. *MMWR Morb Mortal Wkly Rep.* 2024;73:435-440. doi:10.15585/mmwr.mm7319a3
- Ombay, G. Mpox Cases This Year Rose to 18, Vaccines Not Needed for Control - Herbosa. *GMA News*. Published September 16, 2024. Accessed September 16, 2024. <https://www.gmanetwork.com/news/topstories/nation/920599/mpox-cases-rose-to-18-vaccines-not-needed-for-control-herbosa/story/>
- Owens, LE, Currie, DW, Krawmarow, EA, et al. JYNNEOS Vaccination Coverage Among Persons at Risk for Mpox – United States, May 22, 2022 – January 31, 2023. *MMWR Morb Mortal Wkly Rep.* 2023;342-347. doi:10.15585/mmwr.mm723a4
- Reuters. India Reports Case of Mpox in Traveller from Affected Country. *Reuters*. Published September 8, 2024. Accessed September 16, 2024. <https://www.reuters.com/world/india/india-reports-case-mpox-traveller-affected-country-2024-09-08/>
- US Centers for Disease Control and Prevention. Information For Healthcare Professionals. Updated April 22, 2024. Accessed August 22, 2024. <https://www.cdc.gov/poxvirus/mpox/clinicians/index.html>



- US Centers for Disease Control and Prevention. Mpox Vaccine Recommendations. Updated April 22, 2024. Accessed August 22, 2024. <https://www.cdc.gov/poxvirus/mpox/vaccines/vaccine-recommendations.html>
- US Centers for Disease Control and Prevention. Vaccination | Mpox. Updated June 13, 2024. Accessed August 22, 2024. <https://www.cdc.gov/poxvirus/mpox/interim-considerations/overview.html>
- US Centers for Disease Control and Prevention. 2022-2023 Mpox Outbreak Global Map. Updated August 6, 2024. Accessed August 22, 2024. <https://www.cdc.gov/poxvirus/mpox/response/2022/world-map.html>
- US Centers for Disease Control and Prevention. U.S. Case Trends. Updated September 2, 2024. Accessed September 16, 2024. [https://www.cdc.gov/mpox/data-research/cases/?CDC\\_AAref\\_Val=https://www.cdc.gov/poxvirus/mpox/response/2022/mpox-trends.html](https://www.cdc.gov/mpox/data-research/cases/?CDC_AAref_Val=https://www.cdc.gov/poxvirus/mpox/response/2022/mpox-trends.html)
- US Centers for Disease Control and Prevention. Weekly Cases of Notifiable Diseases, United States, U.S. Territories, and Non-U.S. Residents Week Ending August 17, 2024 (Week 33). Updated August 17, 2024. Accessed August 22, 2024. <https://wonder.cdc.gov/nndss/static/2024/33/2024-33-table968.html>
- World Health Organization. 2022-24 Mpox (Monkeypox) Outbreak: Global Trends. Updated September 30, 2024. Accessed September 30, 2024. [https://worldhealthorg.shinyapps.io/mpx\\_global/\\_w\\_fd030bc5/#33\\_Maps](https://worldhealthorg.shinyapps.io/mpx_global/_w_fd030bc5/#33_Maps)
- World Health Organization. WHO Chief Convenes Expert Meeting on Mpox Spread. Published August 7, 2024. Accessed August 22, 2024. <https://news.un.org/en/story/2024/08/1152931>

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