



Summary: Mpox Scenario-Based Human Health Risk Assessment for the United States as of 27 August 2024 – 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 1, 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. Cases have been steadily climbing over the last 6 months. The increase in reported cases of IIb in Central and West Africa indicates an increased risk for heightened spread to the US.*

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.

While the US is not yet in Scenario 2 (surge of clade II cases during the fall in the US), the recent increase of clade II mpox cases across Africa increase the likelihood of new imported cases and clusters of viral spread. The US should be on heightened alert for increased clade II spread through travel and local transmission over the coming weeks and months.

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

Scenario-Based Human Health Risk Assessment for the US

	Risk to MSM community	Risk to sex workers	Risk to healthcare workers	Risk to general public
Scenario 1 – Baseline summer increase of clade II in US	Moderate	Moderate	Low	Low

Our **confidence** in these risk scores is **moderate**.

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 August 27, 2024

Clade 2 updates since the last update on June 10, 2024:

- Clade I Ib Mpox cases in the US continue to grow, with the [US CDC reporting](#) 33,435 cases and 60 deaths as of August 6, 2024.
- South Africa has been experiencing a clade I Ib mpox outbreak since May 2024. As of August 4, 2024, the [South Africa Department of Health reports 24 cases and 3 deaths](#). At least 5 of the cases have been [confirmed to be clade I Ib](#). Most of these cases have been reported in men with HIV and many required hospitalizations. Evidence suggests that mpox likely is circulating in the community and has reached the most susceptible individuals, leading to a CFR of 12.5%, much higher than the clade I Ib mpox global CFR, which was 0.2% overall as at the end of May 2024.
- On August 19, 2024, the [Philippines detected](#) a case of mpox in an individual with no recent travel history, the first case since December 2023. [On August 20, 2024](#) the Health Secretary announced 10 cases, all of which are clade I Ib
- [Mpox outbreaks](#) have been reported across Africa, including clade I Ib outbreaks in Cameroon, [Cote d'Ivoire](#), [Liberia](#) and [Nigeria](#).
- The risk assessment has been revised to include new scenarios that separate clade I and II to help differentiate the risk between each clade of Mpox spread beyond the scope of the original risk assessment and new evaluations are necessary. CORI judges that the current Mpox scenario is in scenario 1, with continued heightened transmission of clade I Ib Mpox in the US as the summer comes to a close.

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

Features that would characterize each scenario include:

- **Scenario 1 – Baseline:** Cases of clade I Ib continue to grow in the US as seen in the past 6 months
- **Scenario 2 – Autumn Surge:** Clade I Ib cases surge in the US, vaccination rates remain at current rate, with only [23-37% of at-risk populations fully vaccinated](#).

Mpox Scenario-Based Human Health



- **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 1, meaning the virus currently circulating in the United States is the same clade (clade I Ib) that expanded globally in 2022 and case reports are growing steadily, as the new cases of clade I Ib emerging in Central and West Africa are indicative of the risk of further global spread

This judgment is based on [available data](#) from ongoing mpox case reporting to CDC and [wastewater surveillance](#). As of August 17, 2024, the [CDC has reported](#) steady growth in mpox case counts 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, to date, all patients with confirmed mpox who undergo clade testing have tested positive for [clade I Ib](#). In late 2023, CDC enhanced wastewater surveillance for clade I Ib, increasing testing locations to a total of 186 sites across 32 jurisdictions. As of May 25, 2024, all mpox virus detected through [wastewater sampling](#) has been clade I Ib.

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 I Ib

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

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.

Mpox Scenario-Based Human Health



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.



Appendix: Additional Details on Process and Recommendations

Scenario 1: Baseline

Summary

- Viral group: clade I1b
- Current primary population impacted: MSM community

In this scenario, we considered the risk to human health if there is no change in the current epidemiology of mpox in the US. This involves steadily growing cases of only clade I1b mpox primarily affecting gay, bisexual, and other men who have sex with men (MSM community), particularly those who have not been previously infected, are not vaccinated, or are under vaccinated. This baseline scenario anticipates a continuation of this transmission level and disease severity, and no change in the demographic characteristics of individuals for whom mpox cases are reported.

For this scenario, we determined the health risk **in the United States** to the **MSM community** is **low-moderate**, the health risk to the **sex worker community** is **low-moderate**, the health risk to **healthcare workers** is **low**, the risk to children is **low**, and the health risk to the **general public** is **low**.

Our **confidence** in these risk scores is **high** given the current level of information for each of these factors, our understanding of transmission dynamics, and the availability of treatment resources.

To minimize the sporadic transmission of mpox clade I1b in the US, the CDC and WHO recommend the following:

- All individuals with an [increased risk of infection](#) should receive [2 doses of JYNNEOS](#) vaccine.
- Individuals can reduce their risk by talking with sexual partners about mpox and practicing safer sex and good hygiene.
- Those at increased risk are encouraged to check for symptoms such as a rash with blisters on any part of the body (often starting around the mouth, anus, or genitals), inflammation and pain in the rectum, swollen lymph nodes, and/or fever.
- Those with any mpox symptoms should seek medical advice from a healthcare professional. They should also get tested, take a break from sex, ask close contacts and sexual partners if they have similar symptoms, and avoid close physical contact.
- [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. Clinicians and other healthcare professionals should also [wear all recommended personal protective equipment](#) (PPE) when completing mpox testing.



- People who have been in contact with someone with mpox infection should seek medical advice even if they do not have symptoms. They may be eligible for vaccination, which can [reduce the risk of infection](#) and developing severe disease.

Scenario 2: Autumn Clade II Surge Summary

- Viral group: clade IIb
Projected primary population impacted: MSM community and sex workers

Multiple countries across Africa have experienced increased Mpox activity in July and August of 2024, with new detections of IIb in at [least 7 countries](#). This scenario anticipates an increase in clade IIb mpox transmission, with similar severity of disease.

For this scenario, we determined the health risk **in the United States** to the **MSM community** is **moderate**, the health risk to the **sex workers** is **moderate**, the health risk to **healthcare workers** is **low**, and the health risk to the **general public** is **low**.

Our **confidence** in these risk scores is **moderate** given the current level of information for each of these factors; historical knowledge from the 2022 US mpox outbreak, including our understanding of the transmission dynamics; current reliability and consistency of data on global spread; and the availability of vaccination and treatment resources.

To minimize the potential for a surge in transmission of clade IIb mpox in the US, the CDC and WHO recommend:

- Mass and large gathering event planning and preparedness activities should foster [community-based actions](#) aimed at spreading precise and practical public health advice with a nondiscrimination approach across different media and incorporate educational and awareness-raising initiatives related to mpox and other diseases of concern.
- All individuals with an [increased risk of infection](#) should receive [2 doses of JYNNEOS](#) vaccine.
- Individuals can [reduce their risk](#) by talking with sexual partners about mpox and practicing safer sex and good hygiene.
- Those at increased risk are encouraged to check for symptoms such as a rash with blisters on any part of the body (often starting around the mouth, anus, or genitals), inflammation and pain in the rectum, swollen lymph nodes, and/or fever.
- Those with any mpox symptoms should seek medical advice from a healthcare professional. They should also get tested, take a break from sex, ask close contacts and sexual partners if they have similar symptoms, and avoid close physical contact.
- [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 Clinicians and other healthcare professionals should also [wear all recommended personal protective equipment](#) (PPE) when completing mpox testing.

- People who have been in contact with someone with mpox infection should seek medical advice even if they do not have symptoms. They may be eligible for vaccination, which can [reduce the risk](#) of infection and developing severe disease

Scenario 3: Autumn Clade IIb Case Decline

Summary

- Viral group: clade IIB
- Current primary populations impacted: MSM community, sex workers

For this scenario, we determined the health risk **in the United States** to the **MSM community** is **moderate**, the health risk to **sex workers** is **moderate**, the health risk to **healthcare workers** is **low**, and the health risk to the **general public** is **low**.

Our **confidence** in these risk scores is **low** given the current level of information for each of these factors.

To maximize the possibility of a decline of clade II mpox outbreaks in the US, the CDC and WHO recommend:

- Clinicians and public health practitioners in the US and globally should be [alert for possible cases in travelers](#) from Africa and request clade-specific testing.

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