

Mpox**VDH Guidance for Assessing and Managing Exposed Healthcare Personnel****Exposure risk assessment and public health recommendations for healthcare personnel exposed to a patient with mpox infection**

Background: Transmission of mpox requires prolonged close interaction with a symptomatic individual. *Brief interactions and those conducted using appropriate personal protective equipment (PPE) in accordance with Standard Precautions are not high risk and generally do not warrant postexposure prophylaxis (PEP).*

Purpose: This tool is intended to assist with exposure assessment, monitoring, and PEP recommendations for healthcare personnel (HCP) with potential exposure to mpox in healthcare settings.

How to Use the Tool:

1. Determine the degree of exposure using the *Healthcare Personnel (HCP) Exposure Risk Assessment to a Patient with Mpox*.
2. Based on the degree of exposure, refer to the *Table of Recommendations by Exposure Risk* (pg. 5) for monitoring, post-exposure prophylaxis, and other public health recommendations.

Revision History:

- 12/5/22: Updated name of the disease.
- 8/11/22: Removed the scenario addressing HCP wearing all recommended PPE from the low/uncertain category and added text to the table describing why self-monitoring remains recommended for these HCP. Changed intact skin contact with potentially infectious materials or surfaces from higher risk to intermediate risk. Low/uncertain risk category renamed as “lower” risk category. Revised recommendations for how to monitor HCP and when to apply work restrictions to symptomatic HCP. HCP also no longer need to remain close to home for the duration of monitoring. However, they should notify the [local health department](#) in advance of out-of-state travel so that VDH can notify the receiving jurisdiction.
- 8/25/22: Added language on the rationale for high and intermediate risk contacts to avoid contact with children and immunocompromised individuals, where possible. Removed this recommendation for lower risk contacts.

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Healthcare Personnel (HCP) Exposure Risk Assessment to a Patient with Mpox	
<p>Unrecognized errors during the use of PPE (e.g., self-contaminating when removing contaminated PPE) may create opportunities for transmission to HCP. Therefore, in the absence of an exposure described below, HCP who enter a contaminated patient room or care area while wearing recommended PPE should be aware of the signs and symptoms of mpox. If any signs or symptoms of mpox occur, HCP should notify occupational health services for further evaluation and should not report to work (or should leave work, if signs or symptoms develop while at work).</p>	
Degree of Exposure: High	
<p>During the period of interest¹, did you have any unprotected contact between your broken skin or mucous membranes and the patient with mpox's skin, lesions, or bodily fluids (e.g., inadvertent splashes of patient saliva to the eyes or oral cavity, ungloved contact with patient, penetrating sharps injury from used needle), or soiled materials (e.g., linens, clothing)?</p>	<ul style="list-style-type: none"> • Yes • No
<p>During the period of interest¹, were you inside the patient with mpox's room or within 6 feet of the patient <i>during any medical procedures that may create aerosols² from oral secretions, or activities that may resuspend dried exudates</i> (e.g., shaking of soiled linens) while you were not wearing a NIOSH-approved N95 or equivalent respirator (or higher) and <i>eye protection</i>?</p>	<ul style="list-style-type: none"> • Yes • No
<p>If Yes to any of the above, the degree of exposure is considered High and recommendations include:</p> <ul style="list-style-type: none"> • Monitor for symptoms (refer to table of recommendations by exposure risk below) • PEP: recommended (refer to table for details) <p>If No to all of the above, proceed to assessing Intermediate degree of exposure risk below.</p>	
Degree of Exposure Risk: Intermediate	
<p>During the period of interest¹, were you within 6 feet of the unmasked patient with mpox for 3 hours or more (cumulative) while you were not wearing a surgical mask or higher level respiratory protection?</p>	<ul style="list-style-type: none"> • Yes • No
<p>During the period of interest¹, did you perform activities (e.g., turning, bathing, or assisting with transfer) that resulted in unprotected direct contact between your clothing and the patient with mpox's skin lesions or bodily fluids, or their soiled materials while you were not wearing a gown?</p>	<ul style="list-style-type: none"> • Yes • No
<p>During the period of interest¹, did you have unprotected contact between your intact skin and the skin lesions, bodily fluids, or soiled materials (e.g., linens, clothing) from a patient with mpox?</p>	<ul style="list-style-type: none"> • Yes • No

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If **Yes** to *any* of the above, the degree of exposure is considered **Intermediate** and recommendations include:

- Monitor for symptoms (refer to [table](#) of recommendations by exposure risk below)
- PEP: The need should be based on informed clinical decision making recommended on an individual basis to determine whether benefits of PEP outweigh risks of transmission or severe disease³

If No to all of the above, proceed to assessing Lower degree of exposure risk below.

Degree of Exposure Risk: Lower

During the period of interest¹, did you enter into the contaminated room or patient care area of a patient with mpox without wearing **all** recommended PPE, and in the absence of any exposures above?

- Yes
- No

If **Yes** to the above, the degree of exposure is considered **Lower** and recommendations include:

- Monitor for symptoms (refer to [table](#) of recommendations by exposure risk below)
- PEP: Not recommended

If No to all of the above, proceed to assessing Other Exposures below.

Other Exposures

During the period of interest¹, did you have any other possible exposures to the patient or potentially infectious material in the patient's room not outlined in the exposure risk criteria above?

- Yes
- No

If yes, consult with the [local health department](#) about classification of exposure.

- In general, unprotected direct contact or high risk environmental contact may be considered a high risk exposure.
- Unprotected exposure to infectious materials, or a situation where potential for an aerosol exposure is uncertain may be considered an intermediate risk exposure.
- A situation with uncertainty about whether mpox virus was present on a surface and/or whether a person touched that surface may be considered a lower risk exposure.

If No to the above, the degree of exposure risk is considered **No Risk**. Monitoring and postexposure prophylaxis are not recommended.

¹ Period of interest is defined as onset of symptoms (including prodromal symptoms) through resolution of the rash (i.e., shedding of crusts and observation of healthy pink tissue at all former lesion sites).

² There is neither expert consensus, nor sufficient supporting data, to create a definitive and comprehensive list of aerosol generating procedures (AGPs) for healthcare settings. Commonly performed medical procedures that are often considered AGPs include: Open suctioning of airways, sputum induction, cardiopulmonary resuscitation, endotracheal intubation and extubation, non-invasive ventilation (e.g., BiPAP, CPAP), bronchoscopy and manual ventilation. It is uncertain whether aerosols generated from some procedures may be infectious, such as nebulizer administration and high flow oxygen delivery. For additional information on VDH Mpox HCP Risk Assessment Tool (December 5, 2022)

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aerosol-generating procedures, please see: Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J (2012) Aerosol Generating Procedures and Risk of Transmission of Acute Respiratory Infections to Healthcare Workers: A Systematic Review. PLoS ONE 7(4); <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3338532/#!po=72.2222>

³Factors that may increase the risk of mpox transmission include (but are not limited to): the person with mpox infection had clothes that were soiled with bodily fluids or secretions (e.g., discharge, skin flakes on clothes) or was coughing while not wearing a mask or respirator, or the exposed individual is not previously vaccinated against smallpox or mpox. Persons who may be at increased risk for severe disease include (but are not limited to): children, adolescents, individuals who are pregnant or immunocompromised, and individuals with a history of atopic dermatitis or eczema.

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Table of Recommendations by Exposure Risk

Exposure Risk	Description	Symptom Monitoring	Post Exposure Prophylaxis (PEP)*	Other Recommendations
<p>High</p>	<p>Direct exposure of broken skin or mucous membranes to a patient with mpox infection, their body fluids or potentially infectious material (including on clothing or bedding) without wearing appropriate PPE**.</p> <p>Including:</p> <ul style="list-style-type: none"> ● Unprotected contact between a person’s broken skin or mucous membranes and the skin lesions, or bodily fluids from a patient with mpox (e.g., inadvertent splashes of patient saliva to the eyes or oral cavity of a HCP, penetrating sharps injury from used needle), or soiled materials (e.g., linens, clothing) OR ● Being inside the patient’s room or within 6 feet of a patient during any medical procedures that may create aerosols from oral secretions, or activities that may resuspend dried exudates (e.g., shaking of soiled linens), without wearing an N95 or equivalent respirator (or higher) and eye protection OR ● Exposure that, at the discretion 	<ul style="list-style-type: none"> ● Monitoring[^] of symptoms for 21 days following the last exposure. ● Prior to reporting for work each day, exposed HCP should verify the absence of signs and symptoms of mpox infection. ● HCP should be advised to self-isolate if any symptoms develop¹. ● If symptoms develop, HCP should be managed as defined in CDC mpox infection control guidance for healthcare settings. 	<p>Offer vaccine, ideally within 4 days (up to a maximum 14 days)</p>	<ul style="list-style-type: none"> ● HCP should notify infection control, occupational health, and the local health department to be guided about a medical evaluation. ● Asymptomatic HCP do not need to be excluded from work duty. ● HCP should avoid contact with immunosuppressed people, people who are pregnant or breastfeeding, and children or adolescents where possible.^{***} ● HCP should refrain from donating blood, cells, tissue, breast milk, or semen while being monitored for symptoms. ● HCP should notify the local health department in advance of out-of-state travel so that VDH can notify

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	<p>of public health authorities, was reclassified to this risk level (i.e., exposure that ordinarily would be considered an intermediate risk exposure, raised to this risk level because of unique circumstances)</p>			<p>the receiving jurisdiction.</p>
<p>Intermediate</p>	<ul style="list-style-type: none"> • Being within 6 feet for 3 hours or more (cumulative) of an unmasked patient with mpox without wearing a surgical mask or respirator OR • Activities (e.g., turning, bathing, or assisting with transfer) resulting in contact between an exposed individual's clothing and the patient with mpox's skin lesions or bodily fluids, or their soiled materials while not wearing a gown OR • Exposure that, at the discretion of public health authorities, was reclassified to this risk level because of unique circumstances (e.g., if the potential for an aerosol exposure is uncertain, public health authorities may choose to decrease risk level from high to intermediate) 	<ul style="list-style-type: none"> • Monitoring[^] of symptoms for 21 days following the last exposure. • Prior to reporting for work each day, exposed HCP should verify the absence of signs and symptoms of mpox infection. • HCP should be advised to self-isolate if any symptoms develop¹. • If symptoms develop, HCP should be managed as defined in CDC mpox infection control guidance for healthcare settings. 	<p>Informed clinical decision making recommended on an individual basis to determine whether benefits of PEP outweigh risks of transmission or severe disease^{^^}</p>	<ul style="list-style-type: none"> • HCP should notify infection control, occupational health, and the local health department to be guided about a medical evaluation. • Asymptomatic HCP do not need to be excluded from work duty. • HCP should avoid contact with immunosuppressed people, people who are pregnant or breastfeeding, and children or adolescents where possible.^{***} • HCP should refrain from donating blood, cells, tissue, breast milk, or semen while being monitored for symptoms. • HCP should notify

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				the local health department in advance of out-of-state travel so that VDH can notify the receiving jurisdiction.
Lower	<ul style="list-style-type: none"> • Entry into the contaminated room or patient care area of a patient with mpox without wearing all recommended PPE, and in the absence of any exposures above • Exposure that, at the discretion of public health authorities, was recategorized to this risk level based on unique circumstances (e.g., uncertainty about whether mpox virus was present on a surface and/or whether a person touched that surface) 	<ul style="list-style-type: none"> • Monitoring[^] of symptoms for 21 days following the last exposure. • Prior to reporting for work each day, exposed HCP should verify the absence of signs and symptoms of mpox infection. • HCP should be advised to self-isolate if any symptoms develop¹. • If symptoms develop, HCP should be managed as defined in CDC mpox infection control guidance for healthcare settings. 	Not recommended	<ul style="list-style-type: none"> • HCP should notify infection control, occupational health, and the local health department to be guided about a medical evaluation. • Asymptomatic HCP do not need to be excluded from work duty. • HCP should refrain from donating blood, cells, tissue, breast milk, or semen while being monitored for symptoms.
No Risk	Exposure that public health	None	Not recommended	None

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	<p>authorities determined did not meet criteria for other risk categories</p>			
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¹If an exposed HCP is unable to communicate symptom onset (e.g., HCP with delirium), they should be isolated for 21 days after their last exposure or until they are able to communicate symptom onset (e.g., following delirium resolution) and monitored for the remaining duration of their incubation period.

*ACAM2000 and Jynneos are available for PEP.

**Appropriate PPE includes: NIOSH-certified N95 respirator (or comparable), disposable long-sleeved gown, gloves, and eye protection (e.g., face shield or goggles) as recommended under standard precautions if medical procedures may lead to splashing or spraying of a patient’s body fluids. PPE should be donned before entering the patient’s room and used for all patient contact. Remove all PPE before exiting the patient room except a respirator, if worn. Remove the respirator after leaving the patient room and closing the door.

*** There is remaining uncertainty over potentially increased severity in children and in individuals who are immunocompromised or pregnant. This will be reassessed as evidence emerges. In healthcare settings, where possible, individuals who are pregnant, breastfeeding, or immunocompromised should not assess or clinically care for individuals with suspected or confirmed mpox. High and intermediate risk contacts, where possible, should avoid contact (in household and non-household settings like healthcare settings) with children or adolescents and individuals who are pregnant or immunocompromised.

[^]Monitoring includes a daily assessment for signs and symptoms of mpox: fever ($\geq 100.4^{\circ}\text{F}$ [$\geq 38^{\circ}\text{C}$]), chills, new lymphadenopathy (periauricular, axillary, cervical, inguinal), exhaustion, muscle aches and backache, headache, respiratory symptoms (e.g., sore throat, nasal congestion, or cough), and new skin rash for 21 days after the last exposure. Monitoring could involve in-person visits, regular communications (e.g., phone call or another system) between public health or occupational health representatives and the person under monitoring, self-monitoring by persons and reporting of symptoms to health departments or occupational health programs only if symptoms appear, or another reliable system determined by the health department. Decisions on how to monitor exposed HCP are at the discretion of the occupational health program and public health authorities. In general, the type of monitoring employed often reflects the risk for transmission with more active-monitoring approaches used for higher risk exposures. Self-monitoring approaches are usually sufficient for exposures that carry a lesser risk for transmission. Even higher risk exposures may be appropriate for a self-monitoring strategy if occupational health services or public health authorities determine that it is appropriate. Ultimately, the person’s exposure risk level, their reliability in reporting symptoms that might develop, the number of persons needing monitoring, time since exposure, receipt of PEP, and available resources, are all factors when determining the type of monitoring to be used.

^{^^}Factors that may increase the risk of mpox transmission include (but are not limited to): the person with mpox infection had clothes that were soiled with bodily fluids or secretions (e.g., discharge, skin flakes on clothes) or was coughing while not wearing a mask or respirator, or the exposed individual is not previously vaccinated against smallpox or mpox. Persons who may be at increased risk for severe disease include (but are not limited to): children, adolescents, individuals who are pregnant or immunocompromised, and individuals with a history of atopic dermatitis or eczema.