# Extracted Content from https://ndc.services.cdc.gov/case-definitions/monkeypox-virus-infection-2023/

Mpox Virus Infection 2022 Case Definition | CDC  
Skip directly to site content  
Skip directly to search  
An official website of the United States government  
Here's how you know  
Official websites use .gov  
A .gov website belongs to an official government organization in the United States.  
Secure .gov websites use HTTPS  
A  
lock  
(  
) or  
https://  
means you've safely connected to the .gov website. Share sensitive information only on official, secure websites.  
National Notifiable Diseases Surveillance System (NNDSS)  
Explore Topics  
Search  
Search  
Clear Input  
For Everyone  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View all  
Related Topics:  
NDC Application  
View All  
search  
close search  
search  
National Notifiable Diseases Surveillance System (NNDSS)  
Menu  
Close  
search  
For Everyone  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View All  
Related Topics  
NDC Application  
View All  
National Notifiable Diseases Surveillance System (NNDSS)  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View All  
February 28, 2023  
Case Definitions  
Message Mapping Guides  
Supporting Documents for Implementation  
Event Codes & Other Surveillance Resources  
Mpox Virus Infection  
2022 Case Definition  
Mpox Virus Infection  
Case Definition  
NOTE:  
A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.  
CSTE Position Statement(s)  
22-ID-10  
Background  
Mpox (previously named monkeypox) is a zoonotic disease that is caused by infection with mpox virus.  
Monkeypox virus  
belongs to the  
Orthopoxvirus  
genus in the family  
Poxviridae  
. The  
Orthopoxvirus  
genus also includes variola virus (which causes smallpox), vaccinia virus (used in the smallpox vaccine), and cowpox virus. Mpox was first discovered in 1958 when two outbreaks of a pox-like disease occurred in monkeys kept for research. The first human case of mpox was recorded in 1970 in the Democratic Republic of the Congo (DRC) during a period of intensified effort to eliminate smallpox. Since then, mpox has been reported in people in several other central and western African countries: Cameroon, Central African Republic, Cote d’Ivoire, Democratic Republic of the Congo, Gabon, Liberia, Nigeria, Republic of the Congo, and Sierra Leone.  
1  
Until May 2022, mpox cases in people outside of Africa were linked to international travel or imported animals from endemic areas in Africa. Cases in the United States in 2003 were linked to imported rodents from Ghana;  
2  
two cases in 2021 were linked to international travel.  
3  
Israel, Singapore, and the United Kingdom have also had cases linked to international travel.  
3  
Beginning in May 2022, multiple countries that do not usually have mpox, including the United States, began to report cases not associated with the traditional epidemiologic risk factor of travel to places where the disease is endemic.  
Testing for mpox virus is available through commercial laboratories and through public health laboratories that are part of the Laboratory Response Network (LRN).  LRN laboratories can provide real-time polymerase-chain-reaction (RT-PCR) to detect the presence of non-variola orthopoxvirus deoxyribonucleic acid (DNA). The Centers for Disease Control and Prevention (CDC) can confirm the presence of mpox virus and determine the clade (West African (Clade II) or Congo Basin clade (Clade I)) by mpox virus species-specific RT-PCR. Commercial testing became available during July 2022.  
Mpox does not spread easily person-to-person, but transmission can occur through direct contact with lesions or bodily fluids, indirect contact through fomites (materials that were in contact with lesions or bodily fluids), and through exposure to large respiratory droplets from prolonged face-to-face contact.  
4  
Individuals with exposures that support the highest likelihood of transmission should follow the latest guidance for post-exposure vaccine.  
5  
No commercially available vaccines exist; products are only available through request from the federal government by a public health authority. All individuals with a potential exposure to an infected person should be monitored for 21 days post-exposure for the development of symptoms.  
5  
Both vaccine acquisition for post-exposure and symptom monitoring should be coordinated with public health authorities.  
As of June 2022, 13 jurisdictions in the U.S. have mandated reporting of mpox explicitly. One additional jurisdiction had orthopoxviru  
s  
as explicitly reportable to public health authorities. The apparent changing epidemiology of the disease, the current reliance on the public health system for testing and access to vaccine, and the need for prompt public health response to identified cases for the purposes of reducing spread all support the need for a standardized case definition and national notifiability for mpox virus infection.  
Clinical Criteria  
A person presenting with new onset of:  
clinically compatible rash lesions\*;  
OR  
lymphadenopathy or fever\*\*  
\*The presence of clinically compatible rash lesions should be combined with either a higher or lower epidemiologic linkage criterion for case classification.  
\*\*A person presenting with lymphadenopathy or fever without any clinically compatible rash lesions must meet a higher epidemiologic risk criterion for case classification.  
Laboratory Criteria  
Confirmatory laboratory evidence:  
Detection of mpox virus nucleic acid by molecular testing in a clinical specimen;  
OR  
Detection of mpox virus by genomic sequencing in a clinical specimen.  
Presumptive laboratory evidence:  
Detection of orthopoxvirus nucleic acid by molecular testing in a clinical specimen  
AND  
no laboratory evidence of infection with another non-variola orthopoxvirus;  
OR  
Detection of presence of orthopoxvirus by immunohistochemistry in tissue;  
OR  
Detection of orthopoxvirus by genomic sequencing in a clinical specimen;  
OR  
Detection of anti-orthopoxvirus Immunoglobulin M (IgM) antibody using a validated assay on a serum sample drawn 4-56 days after rash onset, with no recent history (last 60 days) of vaccination\*\*\*.  
Supportive laboratory evidence:  
N/A  
\*\*\*Recent administration of ACAM2000 and JYNNEOS vaccines need to be considered when interpreting an antibody titer.  RABORAL V-RG, an oral rabies vaccine product for wildlife, is a recombinant vaccinia virus, and could lead to an antibody response in an individual exposed to the liquid vaccine; this is expected to be an extremely rare occurrence.  
Note  
:  
The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.  
Epidemiologic Linkage  
Epidemiologic risk factors within 21 days of illness onset:  
Higher Risk Epidemiologic Linkages  
Contact, without the use of appropriate personal protective equipment (PPE)  
‡  
, with a person or animal with a known orthopoxvirus or mpox virus infection;  
OR  
Contact, without the use of appropriate PPE  
‡  
or Biosafety Level (BSL) protocols  
‡  
, with laboratory specimens or other items that could serve as fomites that have been in contact with a person or animal with a known orthopoxvirus or mpox virus infection;  
OR  
Member of an exposed cohort as defined by public health authorities experiencing an outbreak (e.g., participated in activities associated with risk of transmission in a setting where multiple cases occurred).  
Lower Risk Epidemiologic Linkages  
Member of a cohort as defined by public health authorities experiencing mpox activity;  
OR  
Contact with a dead or live wild or exotic pet animal of an African species, or used or consumed a product derived from such an animal (e.g., game meat, powders, etc.);  
OR  
Residence in or travel to a country where mpox is endemic.  
‡  
The language “without the use of appropriate PPE or Biosafety Level (BSL) protocols” includes breaches in the  
recommended PPE and deviations from appropriate BSL protocols.  
Criteria to Distinguish a New Case from an Existing Case  
For surveillance purposes, a new case of mpox virus infection meets the following criteria:  
Healthy tissue has replaced the site of all previous lesions after they have scabbed and fallen off;  
AND  
New lesions are present which have tested positive for orthopoxvirus or mpox virus DNA by molecular methods or genomic sequencing.  
Case Classification  
Suspect  
Meets clinical criteria  
AND  
epidemiologic criteria^  
AND  
no evidence of a negative test for either non-variola orthopoxvirus or mpox virus  
^The presence of clinically compatible rash lesions should be combined with either a higher or lower epidemiologic linkage criterion for case classification.  A  
person presenting with lymphadenopathy or fever without any clinically compatible rash lesions must meet a higher risk epidemiologic risk criterion for case classification.  
Probable  
Meets presumptive laboratory criteria  
Confirmed  
Meets confirmatory laboratory criteria  
References  
Petersen, et al. Human Monkeypox: Epidemiologic and Clinical Characteristics, Diagnosis, and Prevention. Infect Dis Clin N Am 33 (2019) 1027–1043. https://doi.org/10.1016/j.idc.2019.03.001  
Update: multistate outbreak of monkeypox---Illinois, Indiana, Kansas, Missouri, Ohio, and Wisconsin, 2003. MMWR 2003;52 (27):642-646. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5227a5.htm  
Costello V, et al. Imported Monkeypox from International Traveler, Maryland, USA, 2021. Emerg Infect Dis. 2022;28(5):1002-1005. https://doi.org/10.3201/eid2805.220292.  
McCollum AM, Damon IK. Human Monkeypox. Clinical Infectious Diseases, Volume 58, Issue 2, 15 January 2014, Pages 260–267, https://doi.org/10.1093/cid/cit703  
CDC. Monitoring People Who Have Been Exposed. https://www.cdc.gov/poxvirus/monkeypox/clinicians/monitoring.html. Page accessed June 12, 2022.  
Back to Top  
Sources  
Print  
Share  
Facebook  
LinkedIn  
Twitter  
Syndicate  
Content Source:  
Case Definitions  
Message Mapping Guides  
Supporting Documents for Implementation  
Event Codes & Other Surveillance Resources  
National Notifiable Diseases Surveillance System (NNDSS)  
NNDSS receives and shares case data from state, local, and territorial health departments to help public health monitor, control, and prevent serious diseases.  
View All  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View All  
Sign up for Email Updates  
Contact CDC  
Organization  
Policies  
Web Policies  
Languages  
Languages  
Español  
Language Assistance  
Archive  
CDC Archive  
Public Health Publications  
Contact Us  
About CDC  
Organization  
Policies  
Web Policies  
Languages  
Languages  
Español  
Language Assistance  
Archive  
CDC Archive  
Public Health Publications  
HHS.gov  
USA.gov