

CONTAGIOUS COMMENTS

Department of Epidemiology

MONKEYPOX: FREQUENTLY ASKED QUESTIONS (Updated 7/21/2022)

Sarah Janelle, MPH, CIC, Samuel Dominguez, MD, PhD, Suchitra Rao, MBBS, MSCS
Department of Epidemiology

1. What is Monkeypox and where did it come from?

- Monkeypox is a rare zoonotic disease caused by infection with monkeypox virus. Monkeypox virus is an orthopoxvirus; other orthopoxviruses include smallpox and cowpox.
- Monkeypox virus is characterized by a severe rash that typically goes away without treatment, but in some cases, it can lead to severe illness or death, especially in young children.
- Monkeypox was first discovered in 1958 when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research, hence the name 'monkeypox.'
- The first human case of monkeypox was documented in 1970 in the Democratic Republic of the Congo during smallpox eradication campaigns.
- Monkeypox is endemic in several Central and West African countries.
- Cases in people have occurred outside of Africa linked to international travel or imported animals (including cases in the United States, Israel, Singapore, and the United Kingdom).
 - i. Monkeypox was detected in the U.S. in a Massachusetts resident on May 17, 2022 who had recently traveled to Canada.
 - ii. Previous travel-associated cases were detected in July and November 2021 after U.S. residents returned from Nigeria.
 - iii. In 2003, people in six states were infected with monkeypox after having contact with pet prairie dogs that were housed near imported small mammals from Ghana. This was the first time human monkeypox was reported outside of Africa.
- The natural reservoir of monkeypox remains unknown. However, African rodents and non-human primates may harbor the virus and infect people.
- There are two clades of monkeypox:
 - i. The Central African clade can typically cause more severe infections and can have higher mortality (10%). Person-to-person spread is well-documented for Central African monkeypox virus.
 - ii. The West African clade is associated with milder disease, fewer deaths (1% case fatality rate, possibly higher in immunocompromised individuals), and limited human-to-human transmission. To date, all current non-endemic cases are West African clade and no deaths have been reported globally from the current outbreak.

2. What are the clinical symptoms and signs of patients with monkeypox disease?

- Presenting symptoms typically include fever, headache, muscle aches, backache, chills, and fatigue. Sometimes sore throat and cough are present.

- Swollen lymph nodes are distinctive to monkeypox (compared to smallpox), and typically occurs with fever onset, 1 to 2 days before rash onset, or rarely with rash onset. Lymphadenopathy may occur in the neck (submandibular & cervical), armpits (axillary), or groin (inguinal) and occur on both sides of the body or just one.
- Within 1-3 days (sometimes longer) after the appearance of fever, the patient develops a rash, often beginning on the face or in the genital, perianal or oral cavity, and then spreads to other parts of the body.
- Lesions progress through the following stages before falling off: enanthem → macules → papules → vesicles → pustules → scabs.
 - i. The rash associated with monkeypox involves vesicles or pustules that are deep-seated, firm or hard, and well-circumscribed; the lesions may umbilicate (resemble a dot on the top of the lesion) or become confluent and progress over time to scabs.
 - ii. Disseminated rash is centrifugal (more lesions on extremities, face). Lesions can appear on palms, soles.
 - iii. Lesions are often described as painful until the healing phase when they become itchy (crusts).



Gov.uk, "Monkeypox: background information" Retrieved May 2022. <https://www.gov.uk/guidance/monkeypox#clinical-features>

- Atypical features in current outbreak:
 - i. Rash/lesions often start in perianal, genital, or oral mucosa area and do not always disseminate to other parts of the body.
 - ii. In some instances, patients have presented with symptoms such as anorectal pain, tenesmus, and rectal bleeding which upon physical examination, have been found to be associated with visible perianal vesicular, pustular, or ulcerative skin lesions and proctitis.
 - iii. The lesions have sometimes been in different stages of progression on a specific anatomic site (e.g., vesicles and pustules existing side-by-side).
 - iv. Prodromal symptoms (fever, malaise, headache, lymphadenopathy) have not always occurred before the rash if they have occurred at all.
- The illness typically lasts for 2-4 weeks.

- The incubation period (time from infection to symptoms) for monkeypox is usually 7-14 days but can range from 5-21 days. A person is not contagious during this period.

3. How is monkeypox spread?

- Monkeypox virus can spread when a person comes into contact with the virus from an infected animal, infected person, or materials contaminated with the virus. The virus can also cross the placenta from the mother to her fetus.
 - i. Monkeypox spreads between people primarily through direct contact with infectious sores, scabs, or body fluids.
 - ii. It can also be spread with materials that have touched infectious sores, scabs, or body fluids, such as clothing or linens.
 - iii. Monkeypox can be spread by respiratory secretions during prolonged, face-to-face contact.
 - iv. Monkeypox is not typically spread by airborne particles, although this route of transmission can occur when performing aerosol generating procedures involving oral/respiratory secretions or by shaking contaminated linens/clothes into the air.
 - v. Monkeypox can spread during intimate contact between people, including during sex, as well as activities like kissing, cuddling, or touching parts of the body with monkeypox sores.
 - vi. It is not known if monkeypox can spread through semen or vaginal fluids at this time.
- Monkeypox virus may spread from animals to people through the bite or scratch of an infected animal, by handling wild game, or through the use of products made from infected animals.
- Transmission of monkeypox requires prolonged close interaction with a symptomatic individual. Brief interactions and those conducted using appropriate PPE are not high risk and generally do not warrant post-exposure prophylaxis.

4. How long is someone with monkeypox virus considered infectious?

- A person with monkeypox virus is considered infectious from the onset of illness until all lesions have crusted over, those crusts have separated, and a fresh layer of healthy skin has formed under the crust.
- Monkeypox can be spread from the time symptoms start until all sores have healed and a fresh layer of skin has formed – this can take several weeks.

5. How many cases of monkeypox are there globally and locally at the present time?

- As of July 20, 2022, over 15,000 confirmed cases of monkeypox have been reported across 72 countries, including Europe, North and South America, Asia, and Australia. The situation is rapidly evolving. For an updated list of countries with confirmed monkeypox cases, visit: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html>
 - i. Most cases were reported among men who report sexual contact with other men.
 - ii. Some cases were also reported in people who live in the same household as an infected person.
- As of July 21, 2022, there are 2,593 total confirmed monkeypox and orthopoxvirus cases in the United States. For an updated list of states and number of cases, visit: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/us-map.html>
- As of July 21, 2022, CDPHE has reported 36 confirmed cases of monkeypox in Colorado. For an updated list of local cases, visit: <https://cdphe.colorado.gov/diseases-a-to-z/monkeypox>
- CDC's Morbidity and Mortality Weekly Report (*MMWR*) reports on the monkeypox outbreak in the first nine states in May 2022: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7123e1.htm>

6. What is CHCO doing to prepare for monkeypox?

- Team members at CHCO are monitoring the situation closely and are working with CDPHE to understand the quickly evolving situation to ensure that our preparedness and response plan continues to screen for contagious illnesses and protect patients, families, and healthcare workers. Some of our current measures include:
 - i. Travel screening questions for all patients, family members, and visitors arriving at CHCO already include risk factors for monkeypox infection (travel, rash, fever, etc.).
 - ii. We are working closely with our public health partners regarding updates and recommendations.
 - iii. Internal communications via the CHCO intranet will be utilized as needed as the situation evolves and recommendations change.
 - iv. In the situation that team members have an unprotected exposure, tracking and monitoring for 21 days will occur. In discussion with CDPHE, post-exposure vaccination may be considered depending on risk level.

7. What measures can be taken to prevent infection with monkeypox virus?

- Healthcare workers should use proper personal protective equipment (PPE) when caring for patients with suspected or confirmed monkeypox, including gloves, gown, fit-tested N95 or PAPR, and eye protection.
 - i. At CHCO, N95/PAPR Airborne Precautions + eye protection should remain for the duration of the hospital stay since patients can remain infectious until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath. Infectious Disease or Epidemiology must approve discontinuation of isolation precautions.
- Wear proper PPE when coming into contact with any material, such as bed linens, towels and clothing, that has been in contact with a suspect/confirmed monkeypox patient. Avoid shaking linens vigorously to prevent dispersing infectious material that may be present. Clinical staff can promptly and gently place linen in a High-Risk Linen Bag which can be obtained by calling the CHCO linen room.
- A negative airflow room is required for patients suspected to have monkeypox, especially if aerosol generating procedures are performed. Do not cohort patients. Isolate infected patients from others who could be at risk for infection.
- Practice good hand hygiene after contact with infected humans or animals.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid activities (e.g., fans, dry dusting, sweeping, vacuuming) that could resuspend dried material from lesions.
- Use hospital-approved disinfecting products for the appropriate contact time. CHCO products are effective against emerging viral pathogens, including monkeypox virus.
- Waste generated during care of patients with monkeypox (e.g., patient dressings) should be placed in a biohazard bag and processed as regulated medical waste.
- Patients who do not require hospitalization for medical indications may be isolated at home using protective measures, including abstaining from contact with other persons and pets, and wearing a face mask and clothing to cover lesions to prevent further spread. Additional information can be found here: <https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-home.html>
- Prevention through vaccination is available in limited quantity to certain persons:

- i. Pre-exposure prophylaxis with JYNNEOS™ (Imvamune, Imvanex) is recommended as an alternative to ACAM2000 for certain persons at risk for exposure to orthopoxviruses (see also discussion of vaccines below). This attenuated live virus vaccine has been approved by the U.S. FDA for the prevention of monkeypox. For more information, visit: <https://www.cdc.gov/poxvirus/occupational-exposures/orthopoxvirus-vaccine-guidance.html>, and <https://www.cdc.gov/poxvirus/monkeypox/clinicians/smallpox-vaccine.html>
 - ii. Post-exposure prophylaxis should be given within 4 days from the date of exposure in order to prevent onset of the disease depending on the risk level. If given between 4–14 days after the date of exposure, vaccination may reduce the symptoms of disease, but may not prevent the disease.
- The CDC has issued a Level 2 travel alert to multiple countries with reported cases of monkeypox. A list of countries and recommendations for enhanced precautions can be found here: <https://wwwnc.cdc.gov/travel/notices/alert/monkeypox>

8. Which patients should be evaluated for monkeypox?

- Healthcare providers should be alert for patients who have rash illnesses consistent with monkeypox, regardless of whether they have travel or specific risk factors for monkeypox and regardless of gender or sexual orientation.
- Monkeypox should be considered as a possible diagnosis in patients with a rash that could be consistent with monkeypox, especially those with a recent travel history in the month before illness onset to central or west African countries, parts of Europe where monkeypox has been reported, or other areas reporting monkeypox cases.
- The recent monkeypox cases are presenting atypically.
- In addition to a high clinical suspicion for monkeypox, consider the following epidemiologic criteria within 21 days of illness onset:
 - i. Patient reports having contact with a person or people with a similar appearing rash or who received a diagnosis of confirmed or probable monkeypox **OR**
 - ii. Had close or intimate in-person contact with individuals in a social network experiencing monkeypox activity **OR**
 - iii. Traveled outside the U.S. to a country with confirmed cases of monkeypox or where monkeypox virus is endemic **OR**
 - iv. Had contact with a dead or live wild animal or exotic pet that is an African endemic species or used a product derived from such animals (e.g., game meat, creams, lotions, powders, etc.)
- Epidemiologic criteria and risk factors may change as the investigation continues.

9. What other diseases should be considered?

- Other diseases that should be considered include varicella zoster virus infection or sexually transmitted infections like syphilis, herpes simplex virus, chancroid, lymphogranuloma venereum (LGV), and granuloma inguinale.
- Other differential diagnoses to consider:
 - i. Non-infectious genital ulcer disease: recurrent aphthous stomatitis, Behcet's Disease, trauma, squamous cell carcinoma
 - ii. Diffuse rash: molluscum contagiosum, disseminated fungal and gonococcal infection, enteroviruses including coxsackie
 - iii. Proctitis: gonorrhea, chlamydia

- Obtain a comprehensive history, including the history of present illness (sequence of clinical manifestations) and social history (travel, contacts, sexual).
- Clinicians should perform a thorough skin and mucosal (e.g., anal, vaginal, oral) examination for the characteristic vesiculo-pustular rash of monkeypox to allow for detection of lesions the patient may not have been previously aware of.
- Historically, sporadic accounts of patients co-infected with monkeypox virus and other infectious agents (e.g., varicella zoster, syphilis) have been reported, so patients with epidemiologic risk factors and a characteristic rash should be considered for testing, even if some lesions are consistent with those from more common infections or other tests are positive.
- Testing for sexually transmitted infections (STI) should be considered. The 2021 CDC STI Treatment Guidelines are found here: <https://www.cdc.gov/std/treatment-guidelines/default.htm>

10. What should I do if I suspect a patient may have monkeypox?

- If you are concerned that a patient might have monkeypox infection, you should immediately place an isolation mask on them and anyone accompany them (family, relatives, etc.).
- Place any suspect patient and family/visitors in a private room with negative pressure and keep the door closed.
 - i. If a negative pressure room is not available, place patient in a private room and keep door closed. The patient should have a dedicated bathroom.
 - ii. Transport and movement of the patient outside of the room should be limited to medically essential purposes. If the patient is transported outside of the room, the patient should wear a well-fitting medical mask and have any exposed skin lesions covered with a sheet or gown.
 - iii. Intubation and extubation, and any procedures likely to spread oral secretions should be performed in an airborne infection isolation (negative pressure) room.
- All healthcare providers entering the room to evaluate a suspect patient should wear gown, gloves, fit-tested N95 respirator or PAPR, and eye protection.
- Providers who suspect monkeypox in a patient should call CDPHE at 303-692-2700 (after hours 303-370-9395) to discuss the case and to receive approval for orthopox testing at the CDPHE lab.
- Providers within the CHCO system who suspect monkeypox in a patient should call CDPHE at 303-692-2700 (after hours 303-370-9395) to discuss the patient and to receive approval for orthopox testing at CDPHE lab. If the patient is in the ED/UC, providers should call the Infectious Disease fellow/physician on call via One Call (Denver 720-777-3999, Colorado Springs 719-305-3999) to review the case or to discuss a clinical question.
 - i. Contact Epidemiology ASAP if a patient is suspected to have monkeypox.
 - ii. If CDPHE approves testing, following the instructions listed below in #11.

11. What is the testing process for monkeypox virus?

- To test for monkeypox, consult with CDPHE (303-692-2700; after hours 303-370-9395) for testing approval.
- Wearing proper PPE (gloves, gown, fit-tested N95 or PAPR, eye protection), collect multiple lesion specimens (minimum two) with sterile dry polyester or Dacron swabs, preferably from different locations on the body and/or from lesions with differing appearance. Specimens should also be obtained from lesions inside the mouth, anus, or vagina, if present. Two separate swabs from each lesion are required for preliminary and confirmatory testing:
 - i. If collecting dry lesions, vigorously swab more than one dry lesion.

- ii. If unroofing the lesions, first sanitize the skin with a sterile alcohol wipe and allow to dry completely. Unroof lesions and swab the fluid.
 - iii. Place one swab in one dry tube (if necessary, break off the end of the applicator into the tube), then repeat with the next swab and place in the second tube. Each specimen should be transferred to a separate dry sterile container, and labeled with the location of the lesion. Do not add or store in vial or universal transport media.
 - iv. In addition to dry swabs, CDC can now accept lesion swabs in viral transport media and lesion crusts. Universal transport media will not be accepted by CDC. Currently, these two specimen types must be received by CDPHE within 24 hours of sample collection and CDC within 7 days of collection. A dry swab remains CDPHE's preferred specimen type.
 - v. All specimen types (dry swab, viral transport media, lesion crust) should be stored at 2-8°C or ≤ -20°C within one hour of collection. Specimens received at the CDPHE laboratory >8°C (prefer frozen) will be considered unacceptable for testing, and testing will not be performed. Frozen samples for courier pick up should be labeled as "frozen" on the outside packaging.
 - vi. Email CDPHE laboratory testing requests at cdphe_cdcsendouts@state.co.us.
 - vii. Rule-out syphilis testing is also available at the state laboratory and requires submission of a blood sample (using a red top tube).
- If the patient is within the CHCO system of care, providers can order a "Miscellaneous Referral Test" and include in the comments "Orthopoxvirus PCR to CDPHE." Contact the lab as specified by location below to request a monkeypox testing kit (includes 2 dry swabs and 2 sterile, dry, screw-top tubes). Swabs used for collection are the swabs used for HSV and VZV testing (Puritan 6" Sterile Standard Rayon Swab w/Polystyrene Handle).
 - i. Anschutz: Call the micro lab (720-777-6703) and leave a message.
 - ii. Colorado Springs: Call the Memorial North lab front desk (719-364-1216).
 - iii. Briargate: Monkeypox testing kits are available on-site and can be requested from the Briargate lab. Specimens should be sent to the Memorial lab for courier to CDPHE.
 - iv. North Campus: Monkeypox testing kits are available on-site and can be requested from the clinical lab. Specimens will be sent to the Anschutz campus prior to CDPHE.
 - v. South Campus: Monkeypox testing kits are available on-site and can be requested from the clinical lab. Specimens will be sent to the Anschutz campus prior to CDPHE.
 - Label each tube with a Beaker label or Epic label.
 - Send the specimen immediately to the appropriate lab since the specimen needs to be refrigerated within 1 hour of collection. Specimens sent by courier should be sent on ice.
 - Specimens are sent from CHCO to the CDPHE laboratory via a STAT courier for performing the orthopox generic test. This confirms the presence of orthopox DNA from the lesions. Positive results are considered a confirmed orthopox case.
 - CDC will perform confirmatory testing by real time PCR (only available at CDC). Positive results are considered a confirmed monkeypox case.
 - Five commercial laboratories currently offer testing for monkeypox. The companies include Aegis Science, Labcorp, Mayo Clinic Laboratories, Quest Diagnostics, and Sonic Healthcare.

12. Who should be admitted to the hospital for monkeypox?

- Hospitalization is based on need for appropriate level of care. Patients meeting clinical criteria for admission will be cared for in negative pressure rooms with staff adhering to N95/PAPR airborne precautions + eye protection.
- Most individuals infected with monkeypox virus have a mild, self-limiting disease course and do not require specific therapy. However, the prognosis for monkeypox depends on multiple factors

including previous vaccination status, current health status, concurrent illnesses, age, and underlying medical conditions.

- Persons who should be considered for admission and treatment following consultation with the CDC might include:
 - i. Persons with severe disease (e.g., hemorrhagic disease, confluent lesions, sepsis, encephalitis, or other conditions requiring hospitalization)
 - ii. Persons who may be at high risk of severe disease:
 1. Pediatric populations, particularly patients younger than 8 years of age
 2. Pregnant or breastfeeding women
 3. Persons with an immunocompromising condition (e.g., human immunodeficiency virus/acquired immune deficiency syndrome infection, leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, being a recipient with hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with immunodeficiency as a clinical component)
 4. Persons with one or more complications (e.g., secondary bacterial skin infection; gastroenteritis with severe nausea/vomiting, diarrhea, or dehydration; bronchopneumonia; concurrent disease or other comorbidities)
 - iii. Persons with monkeypox virus aberrant infections that include its accidental implantation in eyes, mouth, or other anatomical areas where monkeypox virus infection might constitute a special hazard (e.g., the genitals or anus).

13. Are there treatments available for monkeypox?

- At this time, there are no specific treatments approved for monkeypox infection. However, antivirals developed for use in patients with smallpox may prove beneficial.
- The following medical countermeasures are currently available from the Strategic National Stockpile (SNS) as options for the treatment of monkeypox:
 - i. Tecovirimat (TPOXX or ST-246) is an antiviral medication approved by the U.S. FDA for the treatment of human smallpox disease in adults and pediatric patients weighing at least 3 kg. CDC holds an Expanded Access Investigational New Drug Protocol (EA-IND) that allows for the use of Tecovirimat for the treatment of non-variola orthopoxviruses (including monkeypox) in an outbreak. This protocol includes allowance for opening an oral capsule of tecovirimat and mixing its content with semi-solid food for pediatric patients weighing less than 13 kg. Tecovirimat is available as oral (200 mg capsule) and injection for intravenous formulations. Information for healthcare providers on obtaining and using TPOXX for treatment of monkeypox can be found here: <https://www.cdc.gov/poxvirus/monkeypox/clinicians/obtaining-tecovirimat.html>
 - ii. Cidofovir (Vistide) is an antiviral medication approved by the FDA for the treatment of cytomegalovirus (CMV) retinitis in patients with Acquired Immunodeficiency Syndrome (AIDS). The CDC holds an EA-IND that allows for the use of Cidofovir for the treatment of orthopoxviruses (including monkeypox) in an outbreak.
 - iii. Vaccinia Immune Globulin Intravenous (VIGIV) is licensed by the FDA for the treatment of complications due to vaccinia vaccination including eczema vaccinatum, progressive vaccinia, severe generalized vaccinia, vaccinia infections in individuals who have skin conditions, and aberrant infections induced by vaccinia virus (except in cases of isolated

- keratitis). The CDC holds an EA-IND that allows the use of VIGIV for the treatment of orthopoxviruses (including monkeypox) in an outbreak.
- Brincidofovir (Tembexa) is an antiviral medication approved by the FDA in 2021 for the treatment of human smallpox disease in adult and pediatric patients, including neonates. CDC is currently developing an EA-IND to help facilitate use of Brincidofovir as a treatment for monkeypox. However, Brincidofovir is not currently available from the SNS.
 - Data is not available on the effectiveness of Cidofovir, Brincidofovir (CMX001), Tecovirimat (ST-246), and VIG in treating human cases of monkeypox.
 - For more information about treatment, including in vitro and animal studies, side effects, and clinical trials, visit: <https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html>
 - CDC interim clinical guidance for the treatment of monkeypox can be found here: <https://www.cdc.gov/poxvirus/monkeypox/treatment.html>
 - State and territorial health authorities can direct their requests for medical countermeasures for the treatment of monkeypox to the CDC Emergency Operations Center (770-488-7100).
 - Smallpox vaccine, Cidofovir, Tecovirimat (ST-246), and vaccinia immune globulin (VIG) can be used to control a monkeypox outbreak.

14. Are there vaccines available for monkeypox?

- Because monkeypox virus is closely related to the virus that causes smallpox, the smallpox vaccine can protect people from getting monkeypox. Smallpox and monkeypox vaccines are effective at protecting people against monkeypox when given before exposure to monkeypox. Experts also believe that vaccination after a monkeypox exposure may help prevent the disease or make it less severe.
 - i. Past data from Africa suggests that the smallpox vaccine is at least 85% effective in preventing monkeypox. Smallpox vaccine is not currently available to the general public. In the event of another outbreak of monkeypox in the U.S., CDC will establish guidelines outlining who should be vaccinated.
- One vaccine, JYNNEOS™ (also known as Imvamune or Imvanex), has been licensed in the United States to prevent monkeypox and smallpox disease in adults 18 years of age and older. JYNNEOS is a replication-deficient Vaccinia live virus vaccine.
 - i. Colorado received a limited supply of JYNNEOS™ vaccine from the federal government. It is available as post-exposure prophylaxis for close contacts of cases after consultation with CDPHE. Individuals who meet post-exposure prophylaxis criteria include: 1) People identified as close contacts to someone suspected or confirmed to have monkeypox or 2) All gay, bisexual, and other men who have sex with men (cisgender or transgender) aged 18 and older who have had multiple or anonymous sex partners in the last 14 days.
 - ii. CDC's Morbidity and Mortality Weekly (*MMWR*) on Use of Jynneos (Smallpox and Monkeypox Vaccine, Live, Nonreplicating) for Preexposure Vaccination of Persons at Risk for Occupational Exposure to Orthopoxviruses: Recommendations of the Advisory Committee on Immunization Practices – United States, 2022, can be found here: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7122e1.htm>
- A second vaccine, ACAM2000, contains a replication-competent, live vaccinia virus and is licensed for immunization in people who are at high risk for smallpox infection. It can be used in people exposed to monkeypox if used under an expanded access investigational new drug protocol.
 - i. ACAM2000 has not been studied in infants or children. The risk of serious adverse events following vaccination with live vaccinia virus is higher in infants <12 months of age.

- ii. The safety and effectiveness of ACAM2000 have not been established in the age groups from birth to age 16. The use of ACAM2000 in all pediatric age groups is supported by evidence from the adequate and well-controlled studies of ACAM2000 in adults and with additional historical data with use of live vaccinia virus smallpox vaccine in pediatrics. Before the eradication of smallpox disease, live vaccinia virus smallpox vaccine was administered routinely in all pediatric age groups, including neonates and infants, and was effective in preventing smallpox disease. During that time, live vaccinia virus was occasionally associated with serious complications in children, the highest risk being in infants younger than 12 months of age.
- Experts also believe that vaccination after a monkeypox exposure may help prevent the disease or make it less severe.
 - Vaccinia Immune Globulin Intravenous (VIGIV) can be considered for prophylactic use in an exposed person with severe immunodeficiency in T-cell function for which smallpox vaccination following exposure to monkeypox is contraindicated.

15. Do I need to be worried about monkeypox?

- Monkeypox cases in the United States are rare and risk to the general public is low.
- Monkeypox does not occur naturally in the United States, but cases have happened that were associated with international travel or importing animals from areas where the disease is more common.

For more information:

CDC: <https://www.cdc.gov/poxvirus/monkeypox/index.html>

CDC “Monkeypox facts for people who are sexually active” info sheet:

<https://www.cdc.gov/poxvirus/monkeypox/sexualhealth/index.html>

CDPHE: <https://cdphe.colorado.gov/diseases-a-to-z/monkeypox>

WHO: <https://www.who.int/news-room/fact-sheets/detail/monkeypox>

CDC Yellow Book: Health Information for International Travel – Smallpox & Other Orthopoxvirus-Associated Infections: <https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/smallpox-and-other-orthopoxvirus-associated-infections>

If you wish to receive this publication, please provide us with your e-mail address below.

Name: _____
E-mail Address: _____

Both the Contagious Comments and Bug Watch publications are always posted on Children's Hospital Colorado website at:
<https://www.childrenscolorado.org/health-professionals/publications/>

Please return your e-mail address to: Maggie Bay, Children's Hospital Colorado, Epidemiology – Box B276, 13123 E. 16th Avenue, Aurora, CO 80045

or e-mail address: maggie.bay@childrenscolorado.org.

Thank you for your interest in our publication.

CONTAGIOUS COMMENTS

Department of Epidemiology©

EDITOR:

Maggie Bay, Senior Administrative Professional
Children's Hospital Colorado, Dept. of Epidemiology, B-276
13123 E. 16th Avenue, Aurora, CO 80045

Phone: (720) 777-6072; FAX: (720) 777-7295

maggie.bay@childrenscolorado.org

www.ChildrensColorado.org

** We Recycle! **