Clinical Management of Monkeypox Virus: What Nurses Need to Know

Faculty
Jason Farley, PhD, MPH, ANP-BC, FAAN, FAANP, AACRN
Jeffrey Kwong, DNP, MPH, AGPCNP-BC, FAANP, FAAN

Moderator
Carole Treston, RN MPH, ACRN, FAAN

August 2, 2022

ANAC
Association of Nurses in AIDS Care

Johns Hopkins School of Nursing
The Center for Infectious Disease and Nursing Innovation

The Association of Nurses in AIDS Care (ANAC)

Mission: ANAC fosters the professional development of nurses and others involved in the delivery of health care for persons at risk for, living with, and/or affected by the human immunodeficiency virus (HIV) and its comorbidities. ANAC promotes the health, welfare, and rights of people living with HIV around the world.

ANAC
Association of Nurses in AIDS Care

Nursing Continuing Professional Development (NCPD)

ANAC will provide 1 contact hour of NCPD on completion of this activity.

To receive a certificate of completion, attendees must:

- Be registered to attend;
- View today's webinar presentation; and
- Complete the online, post-activity evaluation. You will receive a link to the evaluation by email

The deadline to claim contact hours is December 31, 2022.

ACCREDITED PROVIDER
AMERICAN NURSES CREDENTIALING CENTER

ANAC is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

NCPD questions? Email Sheila@anacnet.org

ANAC
Association of Nurses in AIDS Care

Learning Outcomes

At the conclusion of today's activity, participants will be able to:

1. Discuss the epidemiology & transmission of monkeypox virus
2. Describe typical and atypical presentations of monkeypox disease
3. Discuss current approaches to diagnosis and clinical management of symptomatic monkeypox disease

ANAC
Association of Nurses in AIDS Care

Disclosures

The planners and presenters of this educational activity have no relevant financial relationships to disclose.

ANAC
Association of Nurses in AIDS Care

Housekeeping

- Participant lines muted during the webinar
- Type questions in the “Question” pane of your Dashboard
- Q & A session at the end of the webinar.

ANAC
Association of Nurses in AIDS Care

Faculty

Clinical Management of Monkeypox - What Nurses Need to Know

Jason Farley, PhD, MPH, ANP-BC, FAAN, FAANP, AACRN
Professor, Nurse Practitioner and Director, Center for Infectious Disease and Nursing Innovation
Johns Hopkins University School of Nursing

Jeffrey Kwong, DNP, MPH, AGPCNP-BC, FAANP, FAAN
Professor
Division of Advanced Nursing Practice Rutgers School of Nursing
Nurse Practitioner
Gotham Medical Group

OUR MISSION

Is to cultivate scientific and programmatic infectious disease expertise within Nursing. Center affiliated scientists, trainees and staff design and test innovative, high quality, patient-centered models of care to improve clinical outcomes.

LEARN MORE

Monkeypox: A Global Health Inequity

A Brief History of Monkeypox Virus

- First identified in 1958 in non-human primates in Denmark
- First human case reported in 1970 in Democratic Republic of Congo, in a 9-month-old child
- Over the last 50 years, sporadic outbreaks have occurred mainly in African countries, with occasional limited spread due to travel or importation of animal reservoirs
- A history of MPX outbreaks:
  - Six cases of human MPX were described in Liberia, Nigeria, and Sierra Leone between October 1970 and May 1971
  - Since then, several thousand human cases of monkeypox have been confirmed in 15 different countries, with 11 of them in African countries
  - Monkeypox was imported to the United Kingdom, the USA, Israel, and Singapore

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7694534/pdf/viruses-12-01257.pdf

Virology

- Poxviruses belong to family Poxviridae, a large and diverse family of double-stranded DNA viruses that multiplies in the cytoplasm of infected cells.
- Although MPX is a DNA virus, its entire life cycle occurs in the cytoplasm of infected cells. All the proteins required for viral DNA replication, transcription, virion assembly, and egress are encoded by the MPX genome.
- The two possible means of MPXV transmission are animals–human transmission and human–human transmission.
  - The 2017 Nigeria outbreak was 3:1 male to female.
- Respiratory droplets and contact with body fluids, contaminated patient's environment or items, skin lesion of an infected person have been found to be associated with inter-human transmission.

viruses MDPI

Review

Monkeypox Virus in Nigeria: Infection Biology, Epidemiology, and Evolution

Emmanuel Alakunle [1], Ugo Moens [2], Godwin Nchinda [3,4] and Malachy Ifeanyi Okeke [1,*]

1 Department of Natural and Environmental Sciences, Biomedical Science Concentration, School of Arts and Sciences, American University of Nigeria, 98 Lamido Zubairu Way, PMB 2250 Yola, Nigeria; emmanuel.alakunle@aun.edu.ng
2 Molecular Inflammation Research Group, Institute of Medical Biology, University i Tromsø (UIT)—The Arctic University of Norway, N-9037 Tromsø, Norway; ugo.moens@uit.no
3 Laboratory of Vaccinology and Immunology, the Chantal Biya International Reference Center for Research on the Prevention and Management HIV/AIDS (CIRCB), P.O Box 3077 Yaoundé-Messa, Cameroon; nsehleseh@gmail.com
4 Department of Pharmaceutical Microbiology & Biotechnology, Faculty of Pharmaceutical Sciences, Nnamdi Azikiwe University, P.O Box 420110 Awka, Nigeria
* Correspondence: malachy.okeke@aun.edu.ng; Tel.: +234-814-554-5022

Received: 30 September 2020; Accepted: 30 October 2020; Published: 5 November 2020

check for updates

Abstract: Monkeypox is a zoonotic disease caused by monkeypox virus (MPXV), which is a member of orthopoxvirus genus. The reemergence of MPXV in 2017 (at Bayelsa state) after 39 years of no reported case in Nigeria, and the export of travelers' monkeypox (MPX) from Nigeria to other parts of the world, in 2018 and 2019, respectively, have raised concern that MPXV may have emerged to occupy the ecological and immunological niche vacated by smallpox virus. This review X-rays the current state of knowledge pertaining the infection biology, epidemiology, and evolution of MPXV in Nigeria and worldwide, especially with regard to the human, cellular, and viral factors that modulate the virus transmission dynamics, infection, and its maintenance in nature. This paper also elucidates the role of recombination, gene loss and gene gain in MPXV evolution, chronicles the role of signaling in MPXV infection, and reviews the current therapeutic options available for the treatment and prevention of MPX. Additionally, genome-wide phylogenetic analysis was undertaken, and we show that MPXV isolates from recent 2017 outbreak in Nigeria were monophyletic with the isolate exported to Israel from Nigeria but do not share the most recent common ancestor with isolates obtained from earlier outbreaks, in 1971 and 1978, respectively. Finally, the review highlighted gaps in knowledge particularly the non-identification of a definitive reservoir host animal for MPXV and proposed future research endeavors to address the unresolved questions.

Keywords: *Poxviridae*; orthopoxviruses; monkeypox viruses; epidemiology; Nigeria; signaling; phylogeny; gene loss; recombination; antiviral drugs

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7694534/pdf/viruses-12-01257.pdf

Fair Warning from African Scientists

- The reemergence is not just a public health concern for Nigeria only but has global health implication as trade in rodents have exported MPX to USA in 2003 while human travelers from Nigeria have also exported the disease to Israel, Singapore, and the United Kingdom in 2018 and 2019, respectively.

- More worrisome is that there is now evidence of human-to-human transmission of the West African clade of MPX not just in Nigeria but also in the United Kingdom.

- MPX ***should no longer be considered a rare disease that is geographically limited*** to countries in the West and Central Africa.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7694534/pdf/viruses-12-01257.pdf

NEWS | 23 June 2022

Monkeypox in Africa: the science the world ignored

African researchers have been warning about monkeypox outbreaks for years. As vaccines are deployed globally, they worry they will be left behind.

Max Kozlov

A woman and her child await treatment for monkeypox at a facility run by Doctors Without Borders in the Central African Republic in 2018. Credit: Charles Bouessel/AFP/Getty

https://www.nature.com/articles/d41586-022-01686-z

Epidemiology of MPX Outbreak, 2022

2022 Monkeypox Outbreak Global Map

Data as of 29 Jul 2022 5:00 PM EDT

Print

2022 U.S. Monkeypox Outbreak >

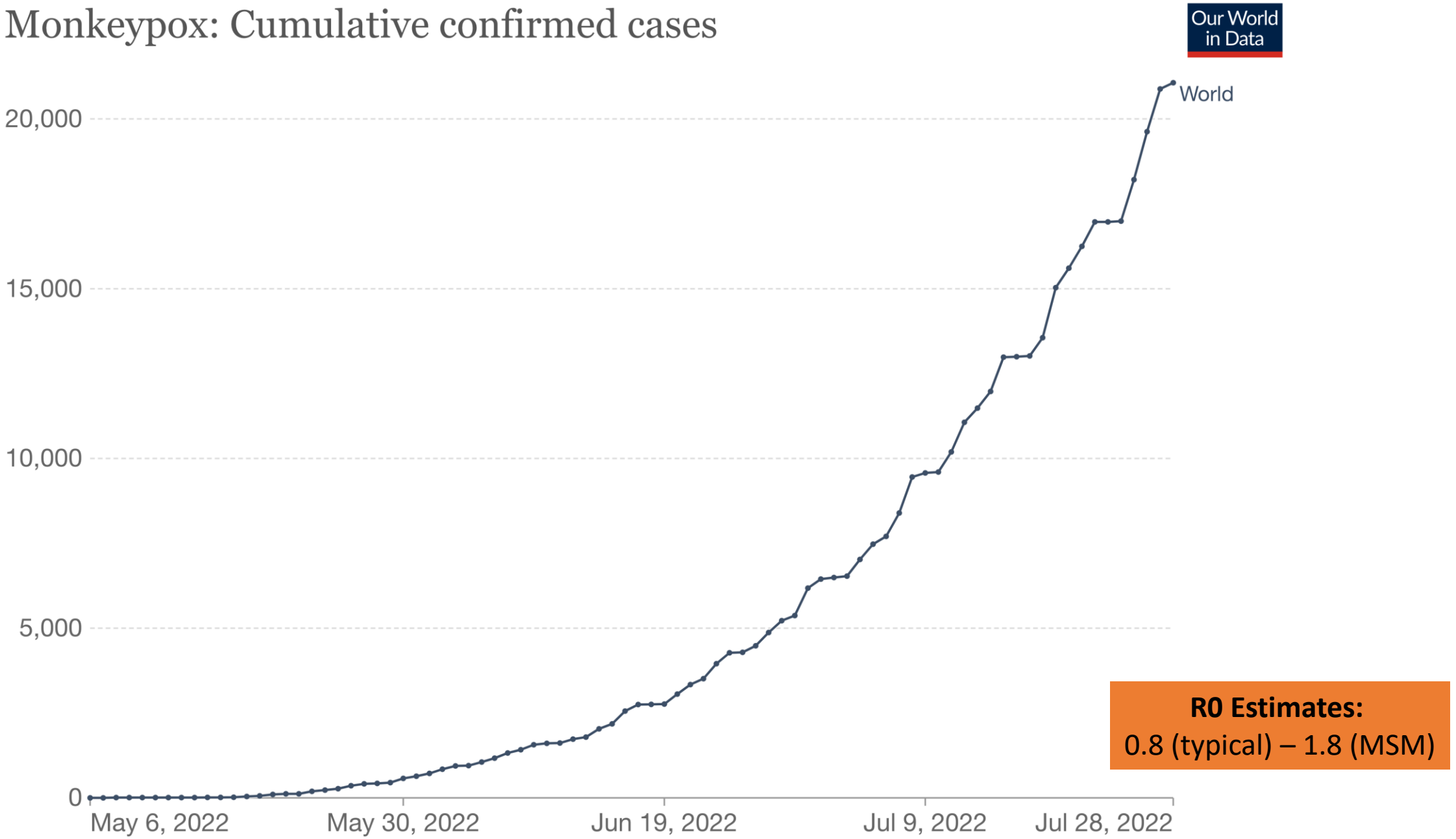
Confirmed Cases

22,485	22,141	344
Total	In countries that have not historically reported monkeypox	In countries that have historically reported monkeypox

Locations

79	72	7
Total	In countries that have not historically reported monkeypox	In countries that have historically reported monkeypox

https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html



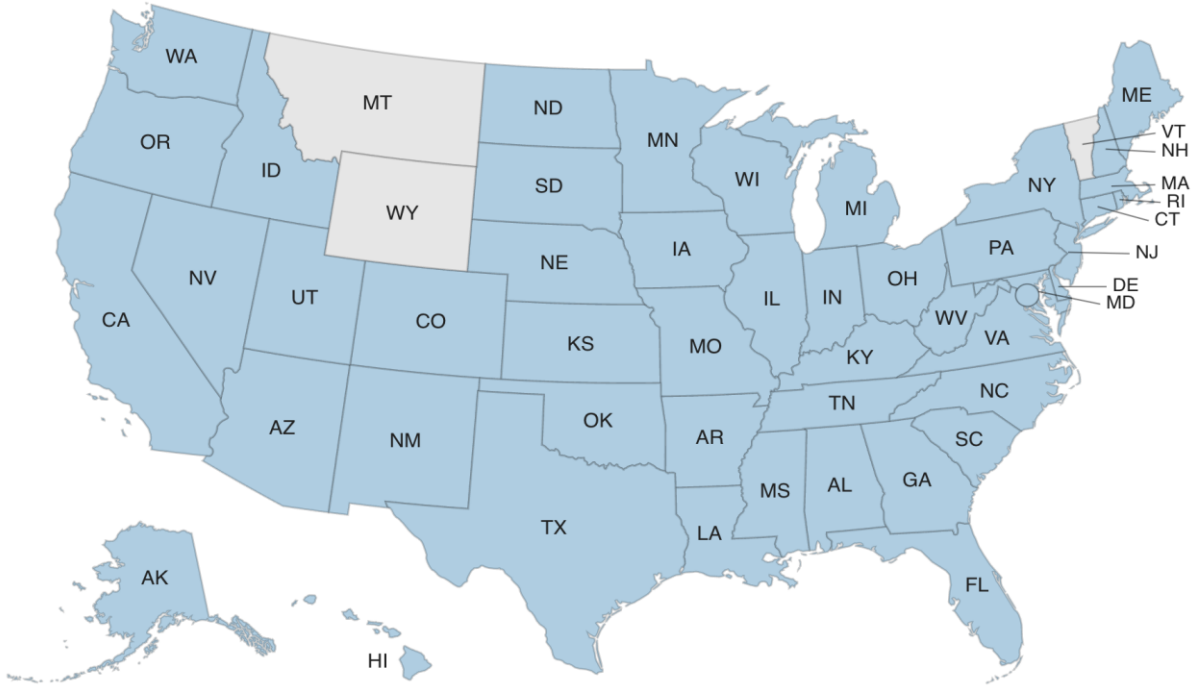
R0 Estimates:
0.8 (typical) – 1.8 (MSM)

2022 U.S. Map & Case Count

Updated July 29, 2022 Print

Total confirmed monkeypox/orthopoxvirus cases: 5,189

*One Florida case is listed here but included in the United Kingdom case counts because the individual was tested while in the UK.



https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html

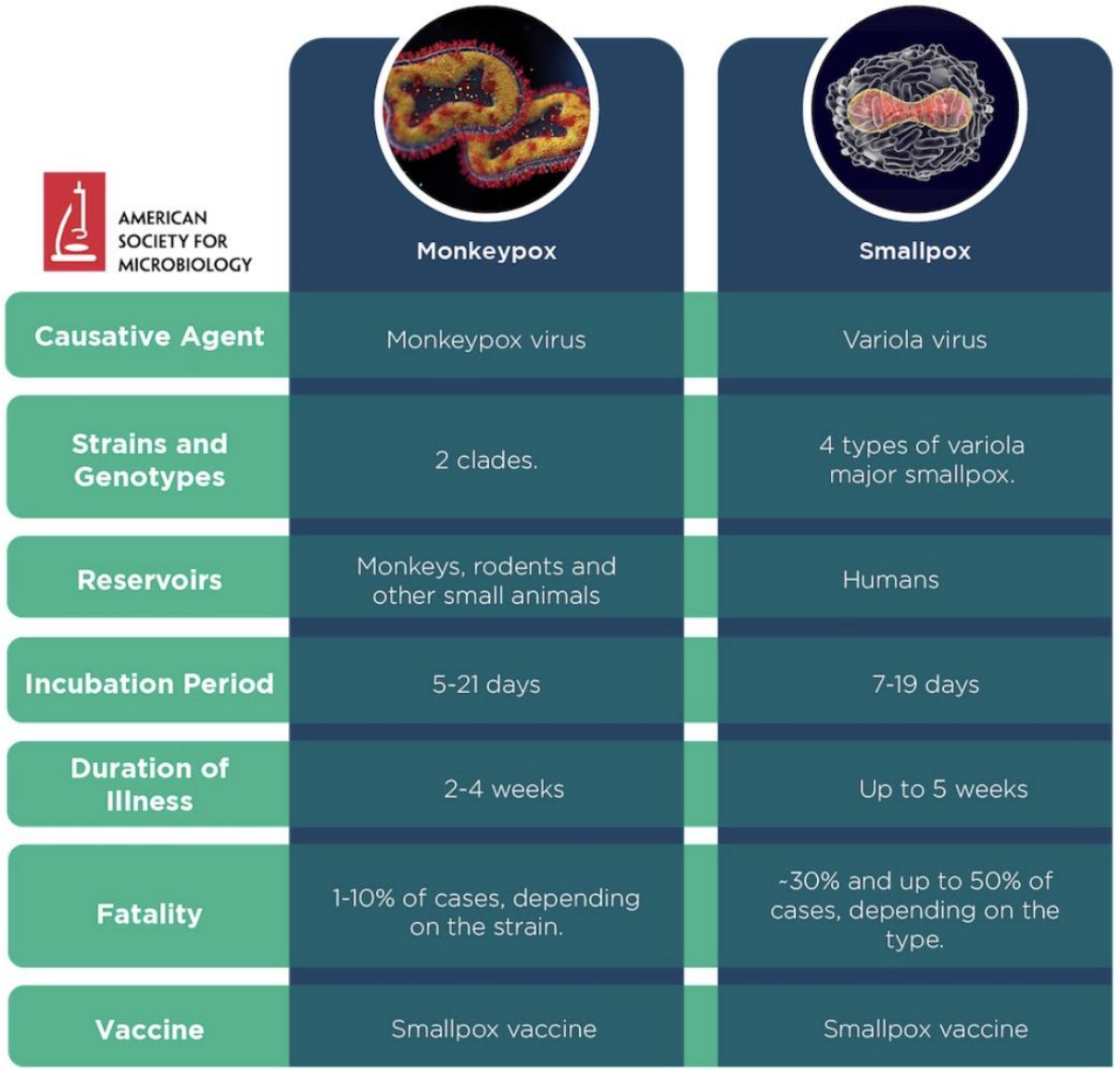
Transmission and Incubation Period

The mean incubation period among cases reported is estimated at 8.5 days, ranging from 4.2 to 17.3 days (18 cases, Netherlands).

The mean serial interval is estimated at 9.8 days (95% CI 5.9-21.4 day, 17 case-contact pairs in UK).

To date, 10 cases of infection have been reported among health care workers, of which at least nine were non-occupational.

WHO: 25, June 2022

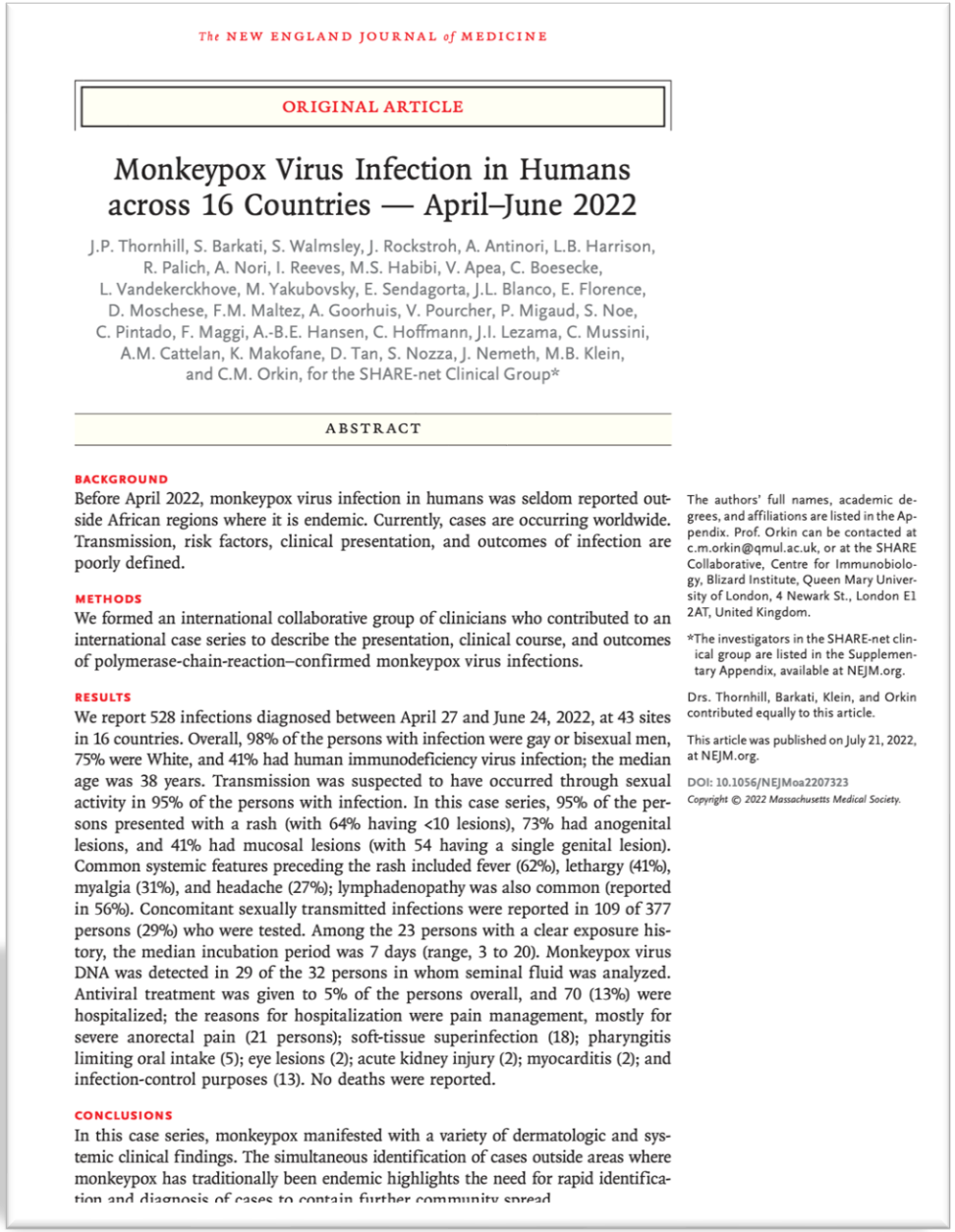


AMERICAN SOCIETY FOR MICROBIOLOGY	Monkeypox	Smallpox
Causative Agent	Monkeypox virus	Variola virus
Strains and Genotypes	2 clades.	4 types of variola major smallpox.
Reservoirs	Monkeys, rodents and other small animals	Humans
Incubation Period	5-21 days	7-19 days
Duration of Illness	2-4 weeks	Up to 5 weeks
Fatality	1-10% of cases, depending on the strain.	~30% and up to 50% of cases, depending on the type.
Vaccine	Smallpox vaccine	Smallpox vaccine

1. https://www.cdc.gov/poxvirus/monkeypox/clinicians/clinical-recognition.html
2. https://www.who.int/news-room/fact-sheets/detail/monkeypox
3. https://www.fda.gov/vaccines-blood-biologics/vaccines/smallpox

MPX Case Series Report

- 528 infections in 16 countries
- 98% in gay, bi-sexual men
- 75% white; median age 38
- 41% HIV co-infection
- 29% Concomitant STI at diagnosis



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Monkeypox Virus Infection in Humans across 16 Countries — April–June 2022

J.P. Thornhill, S. Barkati, S. Walmsley, J. Rockstroh, A. Antinori, L.B. Harrison, R. Palich, A. Nori, I. Reeves, M.S. Habibi, V. Apea, C. Boesecke, L. Vandekerckhove, M. Yakubovsky, E. Sendagorta, J.L. Blanco, E. Florence, D. Moschese, F.M. Maltez, A. Goorhuis, V. Pourcher, P. Migaud, S. Noe, C. Pintado, F. Maggi, A.-B.E. Hansen, C. Hoffmann, J.I. Lezama, C. Mussini, A.M. Cattelan, K. Makofane, D. Tan, S. Nozza, J. Nemeth, M.B. Klein, and C.M. Orkin, for the SHARE-net Clinical Group*

ABSTRACT

BACKGROUND

Before April 2022, monkeypox virus infection in humans was seldom reported outside African regions where it is endemic. Currently, cases are occurring worldwide. Transmission, risk factors, clinical presentation, and outcomes of infection are poorly defined.

METHODS

We formed an international collaborative group of clinicians who contributed to an international case series to describe the presentation, clinical course, and outcomes of polymerase-chain-reaction–confirmed monkeypox virus infections.

RESULTS

We report 528 infections diagnosed between April 27 and June 24, 2022, at 43 sites in 16 countries. Overall, 98% of the persons with infection were gay or bisexual men, 75% were White, and 41% had human immunodeficiency virus infection; the median age was 38 years. Transmission was suspected to have occurred through sexual activity in 95% of the persons with infection. In this case series, 95% of the persons presented with a rash (with 64% having <10 lesions), 73% had anogenital lesions, and 41% had mucosal lesions (with 54 having a single genital lesion). Common systemic features preceding the rash included fever (62%), lethargy (41%), myalgia (31%), and headache (27%); lymphadenopathy was also common (reported in 56%). Concomitant sexually transmitted infections were reported in 109 of 377 persons (29%) who were tested. Among the 23 persons with a clear exposure history, the median incubation period was 7 days (range, 3 to 20). Monkeypox virus DNA was detected in 29 of the 32 persons in whom seminal fluid was analyzed. Antiviral treatment was given to 5% of the persons overall, and 70 (13%) were hospitalized; the reasons for hospitalization were pain management, mostly for severe anorectal pain (21 persons); soft-tissue superinfection (18); pharyngitis limiting oral intake (5); eye lesions (2); acute kidney injury (2); myocarditis (2); and infection-control purposes (13). No deaths were reported.

CONCLUSIONS

In this case series, monkeypox manifested with a variety of dermatologic and systemic clinical findings. The simultaneous identification of cases outside areas where monkeypox has traditionally been endemic highlights the need for rapid identification and diagnosis of cases to contain further community spread.

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Prof. Orkin can be contacted at c.m.orkin@qmul.ac.uk, or at the SHARE Collaborative, Centre for Immunobiology, Blizard Institute, Queen Mary University of London, 4 Newark St., London E1 2AT, United Kingdom.

*The investigators in the SHARE-net clinical group are listed in the Supplementary Appendix, available at NEJM.org.

Drs. Thornhill, Barkati, Klein, and Orkin contributed equally to this article.

This article was published on July 21, 2022, at NEJM.org.

DOI: 10.1056/NEJMoa2207323

Demographics

Table 1. Demographic and Clinical Characteristics of the Persons with Monkeypox.*

Characteristic	All Persons (N = 528)
Median age (range) — yr	38 (18–68)
Sex or gender — no. (%)	
Male	527 (>99)
Female	0
Trans or nonbinary	1 (<1)
Sexual orientation — no. (%)†	
Heterosexual	9 (2)
Homosexual	509 (96)
Bisexual	10 (2)
Race or ethnic group — no. (%)†	
White	398 (75)
Black	25 (5)
Mixed race	19 (4)
Latinx	66 (12)
Other or unknown	20 (4)
HIV positive — no. (%)	218 (41)
HIV negative or status unknown — no. (%)	310 (59)
Use of preexposure prophylaxis against HIV — no./total no. (%)	176/310 (57)
Foreign travel in month before diagnosis — no. (%)‡	147 (28)
Continent of travel — no./total no. (%)	
Europe	132/147 (90)
North America	9/147 (6)
Australasia	0/147
Africa and Middle East	2/147 (1)
Central and South America	2/147 (1)
Not stated	2/147 (1)
Known to have undergone STI screening — no. (%)	377 (71)
Microbiologically confirmed concomitant STI present — no./total no. screened (%)	109/377 (29)
Gonorrhea	32/377 (8)
Chlamydia	20/377 (5)
Syphilis	33/377 (9)
Herpes simplex virus infection	3/377 (1)
Lymphogranuloma venereum	2/377 (1)
Chlamydia and gonorrhea	5/377 (1)
Other or not stated	14/377 (4)
HIV test taken — no./total no. with previously unknown or negative HIV status (%)	122/310 (39)
New HIV infection diagnosis — no./total no. (%)	3/122 (2)
Sexual history not known — no./total no. (%)	122/528 (23)
Median no. of sex partners in previous 3 months (IQR)	5 (3–15)
"Chemsex" reported in the previous month — no. (%)	106 (20)
Reported attendance at a sex-on-site event in the previous month — no. (%)	169 (32)
Known hepatitis infection — no. (%)	
Hepatitis B virus surface antigen positive	6 (1)
Hepatitis C virus antibody positive	30 (6)
Hepatitis C virus RNA positive	8 (2)
Reported history of smallpox vaccination — no. (%)	49 (9)

* Percentages may not total 100 because of rounding. HIV denotes human immunodeficiency virus, IQR interquartile range, and STI sexually transmitted infection.
† Sexual orientation and race or ethnic group were reported by the persons.
‡ Travel from the country of residence in the month before the positive monkeypox virus polymerase-chain-reaction (PCR) result is shown.

Among those with HIV Co-Infection (n=218)

Table 2. Demographic and Clinical Characteristics of Persons with HIV Infection in the Case Series.*

Characteristic	Persons with HIV Infection (N=218)
Median age (range) — yr	39 (21–62)
Male sex — no. (%)	218 (100)
Sexual orientation — no. (%)	
Homosexual	212 (97)
Heterosexual	2 (1)
Bisexual	4 (2)
Median CD4 cell count (IQR) — cells/mm^3	680 (513–861)
Missing CD4 cell-count data — no. (%)	33 (15)
HIV viral load — no./total no. with data (%)	
<50 copies/ml	180/190 (95)
<200 copies/ml	185/190 (97)
Missing HIV viral load data — no. (%)	28 (13)
Known to be taking ART — no. (%)	210 (96)
ART regimen among those taking ART	
Backbone — no./total no. (%)	
Tenofovir-based three-drug regimen	102/210 (49)
Abacavir-based three-drug regimen	20/210 (10)
Zidovudine-based three-drug regimen	2/210 (1)
Two-drug regimen	48/210 (23)
Missing or unknown	38/210 (18)
Third agent — no./total no. (%)†	
Integrase inhibitor	129/210 (61)
NNRTI	31/210 (15)
bPI	11/210 (5)
Missing or unknown	39/210 (19)

* ART denotes antiretroviral therapy, bPI boosted protease inhibitor, and NNRTI nonnucleoside reverse-transcriptase inhibitor.
† Percentages were calculated with the total number of persons taking three-drug regimens (or two-drug regimens with integrase inhibitors included as a third agent) used as the denominator.

Clinical Presentation and Management

Clinical Presentation: General

- Lesions may be scattered or limited
- Anorectal pain/tenesmus/urethral pain may be presenting complaint
- Prodromal symptoms (fever, lymphadenopathy, fatigue) not occurring in all patients
- Some with sexually transmitted co-infections

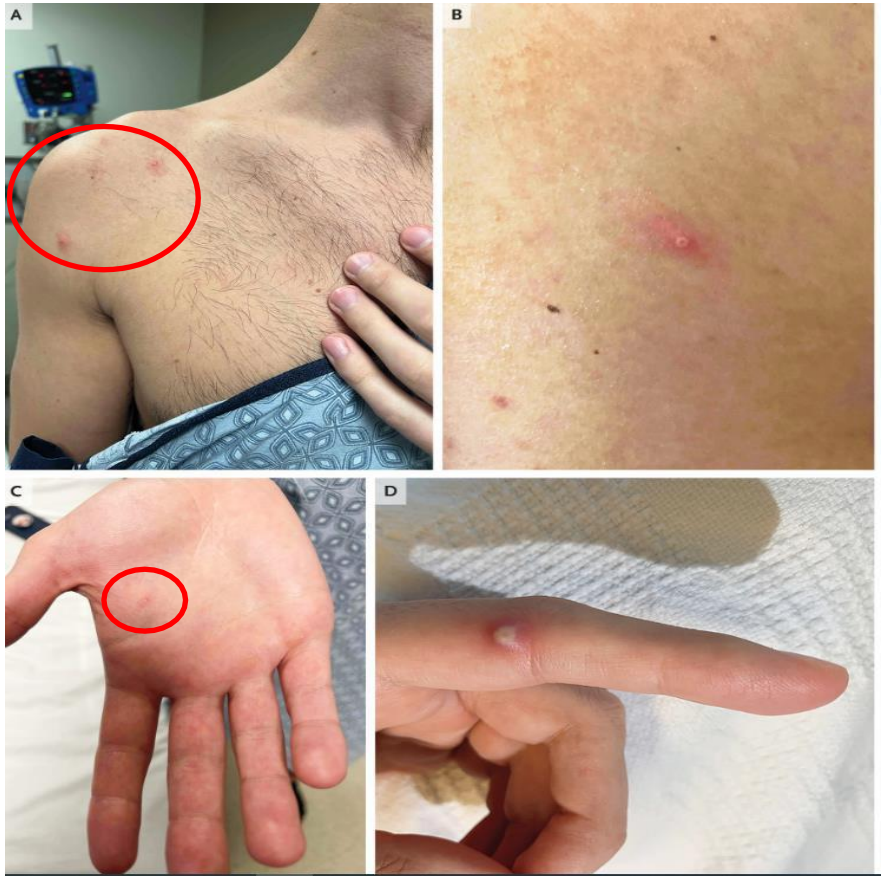
Clinical Presentation: Skin Lesions

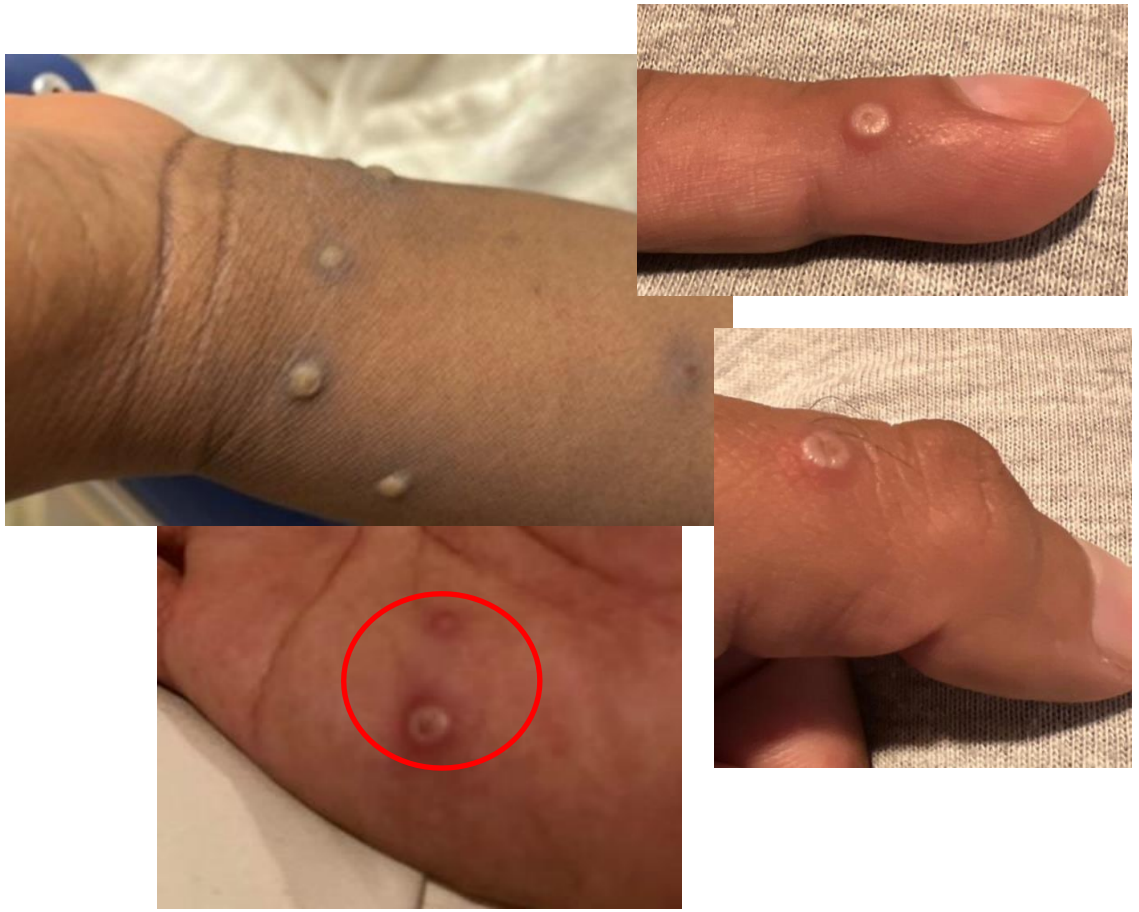
- Most are well-circumscribed
  - Initial presentation, may be confused with acne vulgaris
  - Painful in many cases, but not all
  - Very itchy
  - Often with an umbilicated appearance
  - Some lesions may have surrounding erythema
  - May involve palms and soles
- Can progress **rapidly**
  - papules, vesicles, pustules, and scabs
  - may have lesions of various stages in same body area

Differential Diagnosis:

HSV
Syphilis
Molluscum
Chancroid
Shingles
Acne Vulgaris
Folliculitis
Contact Dermatitis
Condyloma

Clinical Presentation: Skin Lesions





From Basgoz N, Brown CM, Smole SC, et al. Case 24-2022: A 31-Year-Old Man with Perianal and Penile Ulcers, Rectal Pain, and Rash. Epub ahead of print. *Copyright* © Jun 15 2022. Massachusetts Medical Society. Reprinted with permission from Massachusetts Medical Society

Shared with permission from patients, CDC 2022

Anorectal Skin Lesions

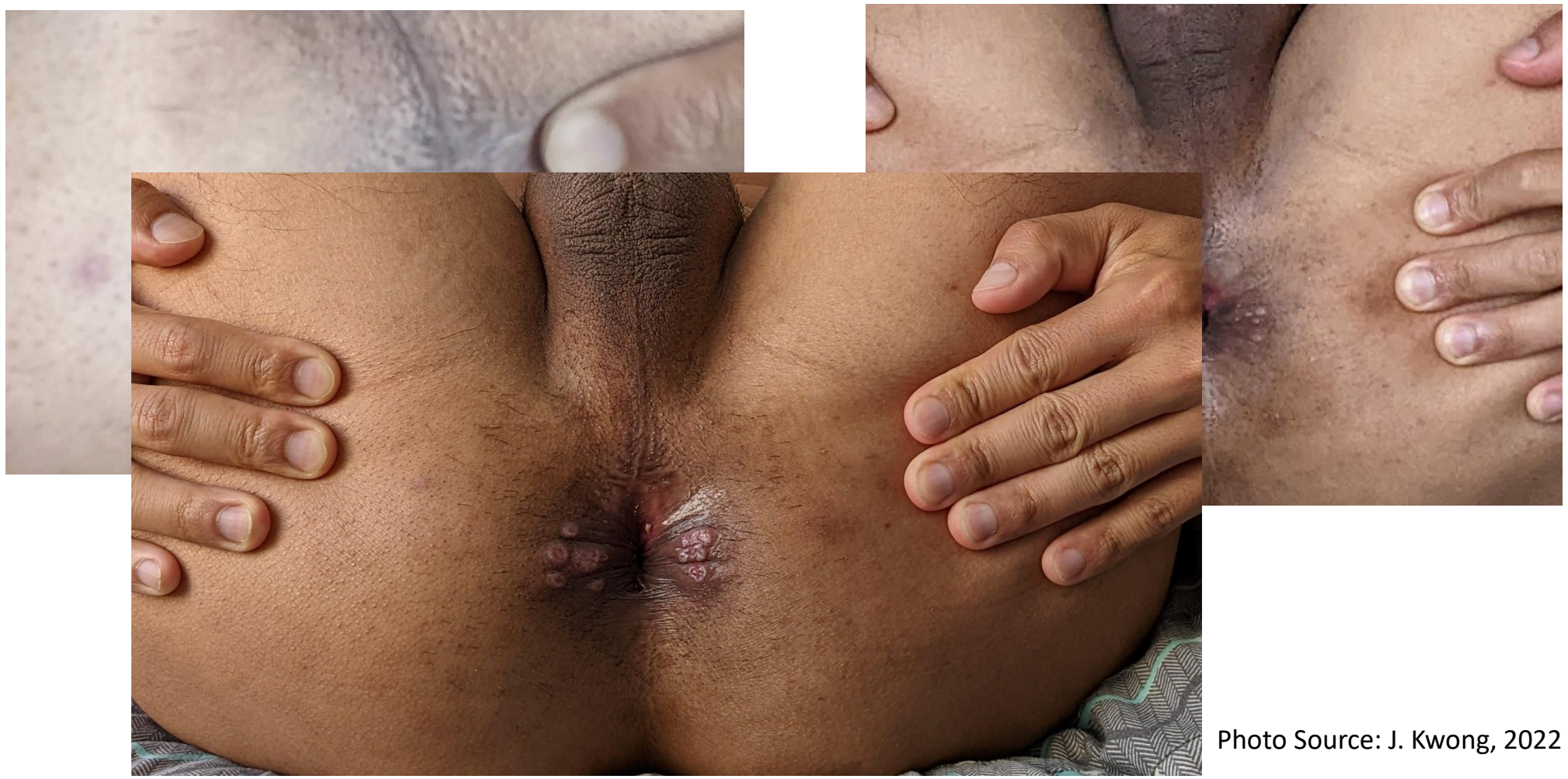


Photo Source: J. Kwong, 2022 with pt. permission

Penile Lesions

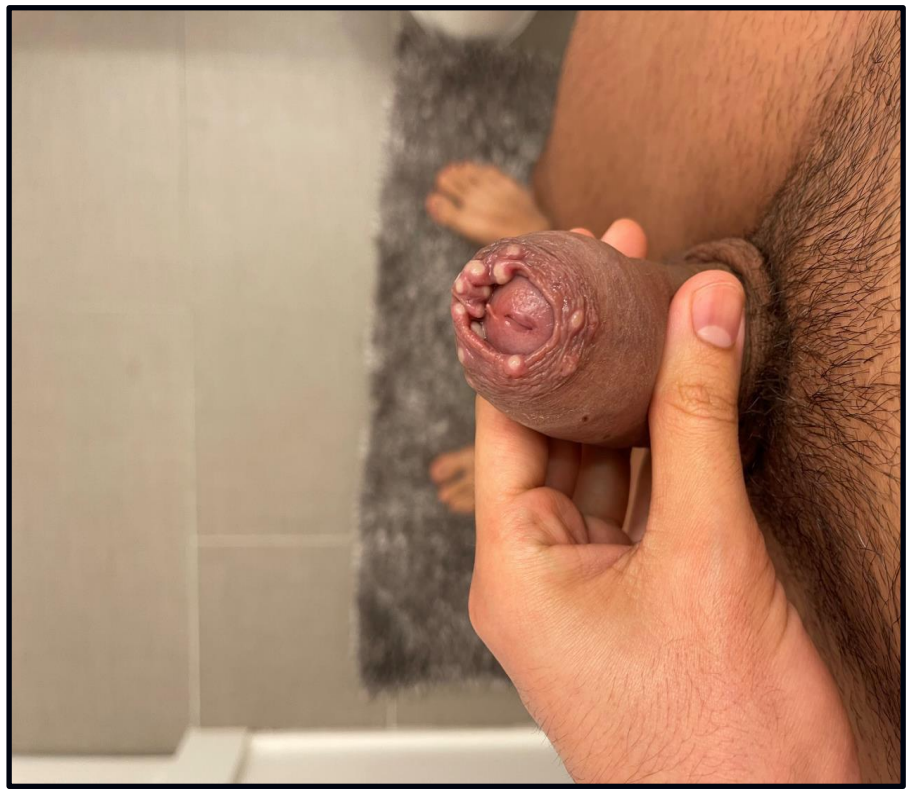
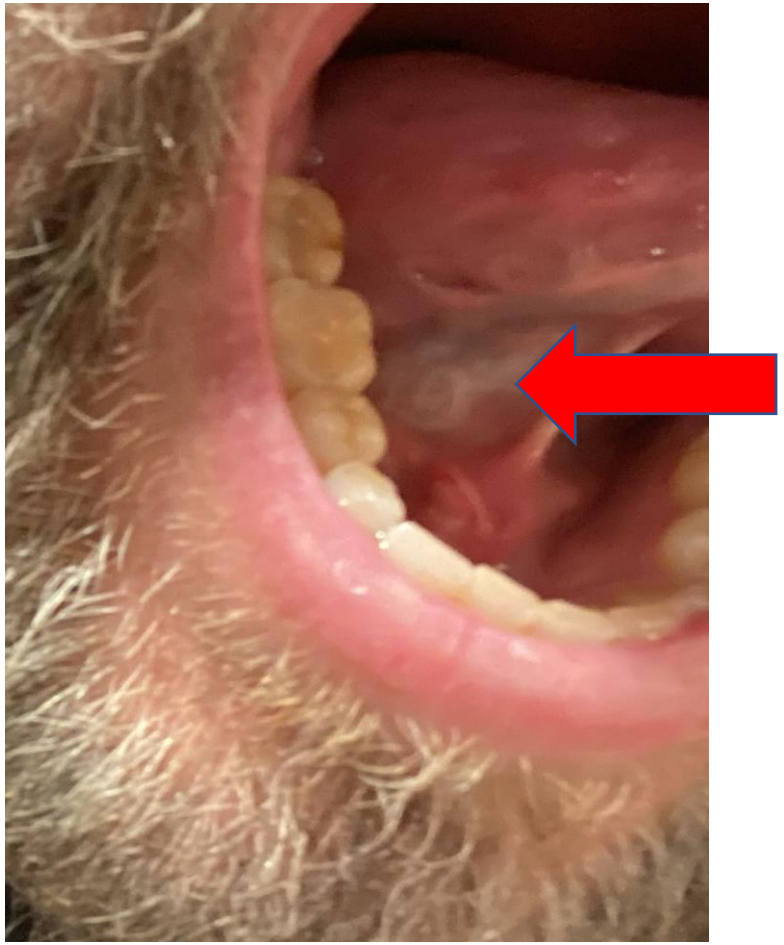
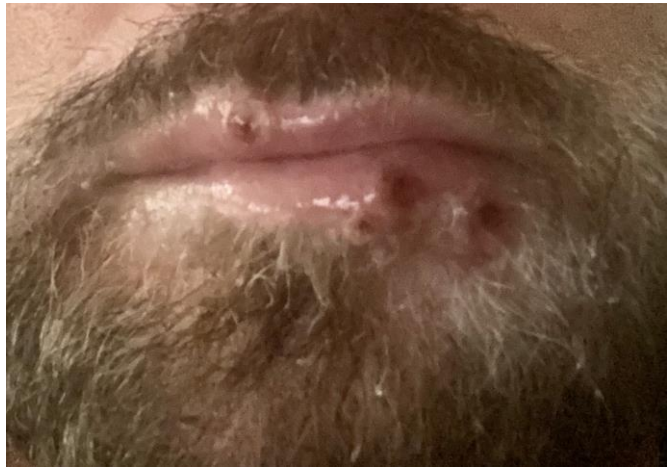
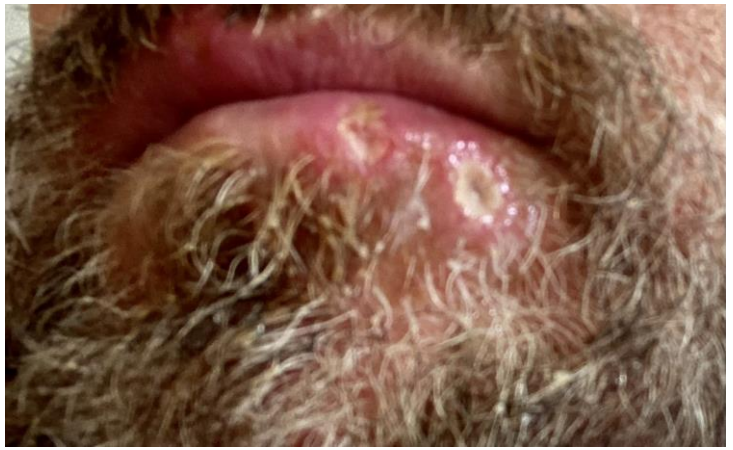


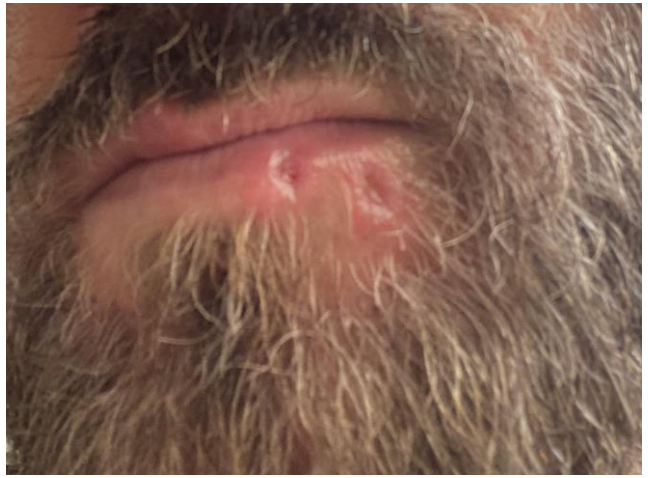
Photo Source: CDC, 2022

Perioral and Intra-Oral Lesions









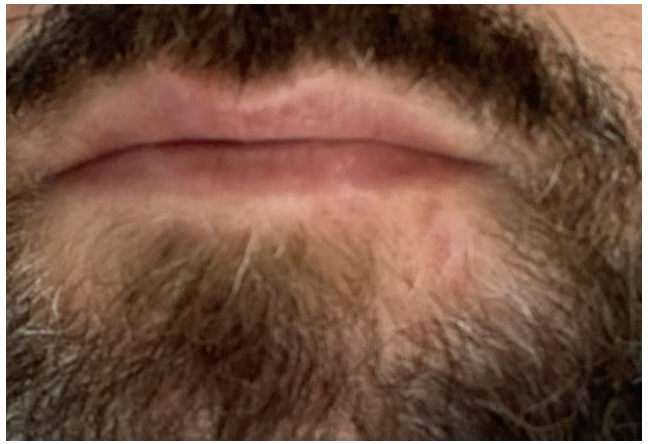


Photo Source: J. Kwong with patient permission

Clinical Course

- Usually mild, self-limiting disease course without need for specific therapy

- Complications:
  - pneumonitis, encephalitis, sight-threatening keratitis,
  - secondary bacterial infections
  - strictures due to scarring

- Prognosis depends on previous vaccination status, initial health status, concurrent illnesses, and comorbidities

CDC COCA Webinar https://emergency.cdc.gov/coca/ppt/2022/052422_slides.pdf

Diagnostic Considerations

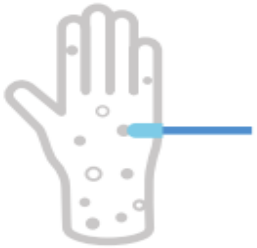
- PCR testing
  - Offer patient a choice of 3 different lesions to swab
- Check with your lab on how specimen should be collected and transported (e.g., dry or in viral transport medium)

01

Take one of the swabs out of its package. Do not touch the tip of the swab with your hands. **You will only need to use one of the swabs for sample collection.** The second swab may be discarded.

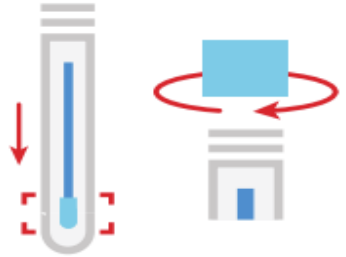
02

Screw off the top of the UTM or VTM tube. Hold swab in one hand and collection tube in the other.



03

Vigorously swab or brush the base of the lesion with the swab.



04

Insert the swab into the universal or viral transport medium and break off the end of the swab, if required, to tightly close the sample.

Screw the top of the collection tube back on.

Diagnostic Results (TAT: 24-48 hours)

FINAL RESULT

[redacted]

Order Date: 07/26/2022 Result Recd: [redacted]

Coll. Date: 07/26/2022 11:53:00 Report: 07/29/2022 15:05:00

[redacted]

MONKEYPOX PCR

NAME	VALUE	REFERENCE RANGE	LAB
F Orthopoxvirus DNA	Detected A	Not Detected	BN

- Non-variola Orthopoxvirus DNA detected by real-time PCR.

PERFORMING LAB: Labcorp Burlington, 1447 York Court, Burlington, Phone - 8007624344, Director - MDNagendra

Symptoms Management Options

NSAIDS	Topical anesthetics	Oral antihistamines	Gabapentin
Sitz Baths	Opioids	Stool softeners	Anti-emetics

CDC Interim Guidelines for the Treatment of Monkeypox
https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html

Tecovirimat

- Tecovirimat (TPOXX) FDA approved for smallpox disease
  - Oral capsule and IV formulations
- CDC-held Emergency Access Investigational New Drug (IND) Protocol allows use of Tecovirimat for primary or early empiric treatment of monkeypox in people of all ages
  - Available from the Strategic National Stockpile
- Documentation related to tecovirimat treatment required as part of the IND protocol

Tecovirimat: Dosing Considerations

Oral: Take with a high fat meal to increase bioavailability

- < 40kg = refer to prescribing information
- 40 – <120 kg = 600mg Twice Daily x 14 days
- 120 kg + = 600mg Three Times Daily x 14 days

IV

- 35 -120 kg = 200mg Twice Daily x 14 days
- >120 kg = 300mg Twice Daily x 14 days
- IV tecovirimat should not be administered to patients with CrCl <30mL/min.

Significant interactions have been reported in healthy adults with co-administration of repaglinide (hypoglycemia) and midazolam (decreased effectiveness of midazolam).

Adverse Effects of Tecovirimat

- **Oral**:
  - headache (12%), nausea (5%), abdominal pain (2%), and vomiting (2%). Neutropenia was found in one study participant.

- **IV:**
  - infusion site pain (73%), infusion site swelling (39%), infusion site erythema (23%), infusion site extravasation (19%), and headache (15%).

https://www.accessdata.fda.gov/drugsatfda_docs/label/2022/214518s000lbl.pdf

Tecovirimat: When To Consider

- Severe disease or at high-risk of severe disease
  - immunocompromising conditions
  - pediatric populations
  - pregnant or breastfeeding women
  - history or presence of atopic dermatitis, other active exfoliative skin conditions
  - one or more complications
  - infections involving eyes, mouth, genitals or anus

Other possible therapies – under investigational consideration

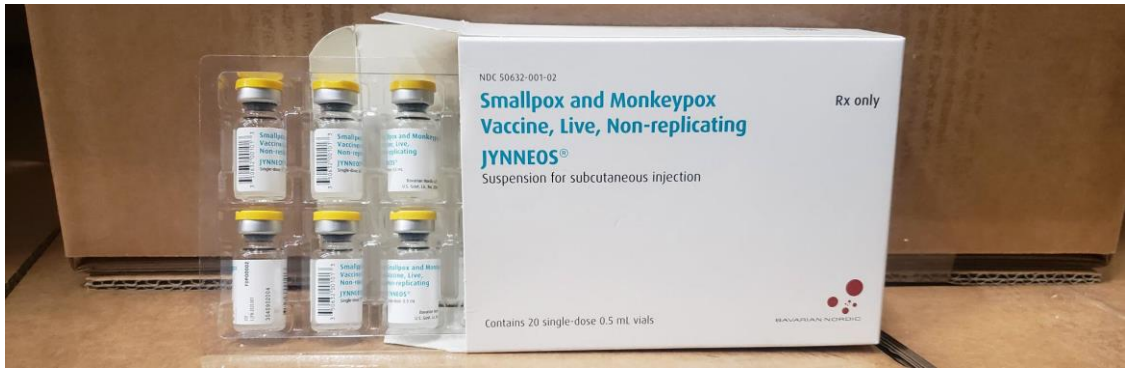
- Vaccinia Immune Globulin Intravenous (VIGIV)
- Cidofovir
- Brincidofovir

CDC Interim Guidelines for the Treatment of Monkeypox, 2022
https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html

Vaccine and Vaccination

JYNNEOS ™

- Live virus vaccine produced from attenuated, non- replicating orthopoxvirus approved in 2019 (a.k.a IMVAMUNE, IMVANEX, MVA)
- JYNNEOS is indicated for prevention of smallpox and monkeypox in adults 18 years of age and older determined to be at high risk for smallpox or monkeypox infection
- CDC developing an Expanded Access Investigational New Drug Protocol to allow the use of JYNNEOS for monkeypox in pediatric populations



- 2 subcutaneous injections 4 weeks apart.
- Not considered vaccinated until 2 weeks after second dose.
- Injection site reactions, fatigue, headache, and muscle pain most common side effect.
- Safe to administer to PWH, pts with eczema/ other exfoliative skin conditions.

CDC Interim Guidelines for the Treatment of Monkeypox, 2022
https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html

What we do not yet know about JYNNEOS ™

- No data available on effectiveness in the current outbreak.
- No data in people who are pregnant or breastfeeding, animal data do not show evidence of reproductive harm
- Pregnancy and breastfeeding are not contraindications to receiving JYNNEOS.

CDC Interim Guidelines for the Treatment of Monkeypox, 2022
https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html

Considerations for vaccine use as PEP

- CDC recommends vaccine series be initiated within 4 days from date of exposure
- If initiated between 4 and 14 days after the date of exposure, vaccination may reduce the symptoms of disease, but may not prevent the disease

https://www.cdc.gov/poxvirus/monkeypox/considerations-for-monkeypox-vaccination.html

The Lived Experience: Patient Perspective on MPX

Implications for Nurses and Providers

Supporting a Person with MPX

- Assess, triage and identify potential cases
- Infection control
  - Clinic
  - Community
- Education regarding symptom control
  - Non-pharmacologic
  - Pharmacologic
- Assist and coordinate services
  - Pharmacy, food/nutrition, caregiver, pets
- Emotional support
  - Fear, anxiety, stigma
  - Outing as gay during contact tracing
  - Financial implications
- Prevention
  - Vaccine education and availability

Infection Control: Clinical Space

- PPE used by healthcare personnel should include:
  - Gown, Gloves, Eye protection, NIOSH-approved particulate respirator equipped with N95 filters or higher

- Avoid activities that could resuspend dried material from lesions (e.g., use of portable fans, dry dusting, sweeping, or vacuuming should be avoided).

- Standard cleaning and disinfection procedures should be performed using an EPA-registered hospital-grade disinfectant with an emerging viral pathogen claim.

https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html#anchor_1653508963990

Infection Control: Home and Community

- While rash persists but no fever or respiratory symptoms:
  - Cover all parts of rash with clothing, gloves, and/or bandages.
  - Wear well-fitting mask when interacting with others
- Until all signs/symptoms fully resolved:
  - Avoid sharing items that have been touched by lesion.
  - Avoid close physical contact with others.
  - Avoid crowds and congregate settings.
  - Wash hands with soap and water or use alcohol-based hand sanitizer, especially after direct contact with the rash.

https://www.cdc.gov/poxvirus/monkeypox/clinicians/faq.html
https://www.cdc.gov/poxvirus/monkeypox/pdf/Monkeypox-Interim-Guidance-for-Household-Disinfection-508.pdf

Vaccination Demand > Supply

People in San Francisco waiting for vaccination

https://apnews.com/article/science-health-public-rochelle-walensky-a7d197e26f4e650600c4b2cd13e0b436

Key Take Away Messages

- Monkeypox is an outbreak of global concern, that our African colleagues warned us about
- Early recognition and diagnosis is critical to prevent transmission and offer treatment
- Oral antiviral therapy is available and likely reduces symptom duration and intensity; symptom management is critical to reduce morbidity
- Vaccination is an important component of controlling the epidemic, but supply outpaced by demand
- Nurses and other health professionals can play a key role in control and management of this public health crisis

Additional Resources

- **Hospital and ID Clinic Key Contacts**
- **City, County and State Health Departments**
- There are many patient level advocacy movements underway

US Centers for Disease Control and Prevention (CDC)

- CDC's Emergency Operations Center: (770) 488-7100
- https://www.cdc.gov/poxvirus/monkeypox/clinicians/index.html
- https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html
- poxvirus@cdc.gov
- "Dear Colleague-Monkeypox" https://www.nursesinaidscare.org/files/2022%20Attachments/Dear_Colleague_-_Monkeypox.pdf

World Health Organization (WHO)

- https://www.who.int/health-topics/monkeypox#tab=tab_1

Questions and Answers

Please submit all questions through the Chat Box and we will do our best to address each of them

EQUITY, COMPASSION & SCIENCE - KEYS TO ENDING THE HIV EPIDEMIC

WWW.NURSESINAIDSCARE.ORG/CONFERENCE

ANAC
Association of Nurses in AIDS Care

Nursing Continuing Professional Development

To be awarded contact hours for this webinar, complete the evaluation found at:

https://www.classmarker.com/online-test/start/?quiz=xry62e166b721544

You will also receive an email with this link after the webinar

Additional Questions?

Email Sheila at Sheila@anac.net

The Association of Nurses in AIDS Care (ANAC) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

ANAC
Association of Nurses in AIDS Care