

MONKEYPOX EPIDEMIOLOGY

LITERATURE REVIEW

Faculty Review: Dr. Diana Cervantes

Student Team Lead: Kaanan Shah

Student Team: Emmanuel Adebunmi, Atiqa Arif, Kamron Gopffarth, Quincey Hogue, Kristine Nguyen, Nihitha Nukala, Chandler O'Leary, Emerald Pina, Amy Tao

hsc⁺ Center for Health Policy

WHAT IS MONKEYPOX AND WHERE DID COME FROM?

- ★ Monkeypox is an orthopoxvirus.
 - Large enveloped, dsDNA virus
 - Dumbbell shaped core
 - There are two serotypes, known as Clade I and Clade II
- ★ The first case was reported in the Democratic Republic of Congo in 1970.
- ★ The true origin is unknown but rodents and small mammals have been thought to be the source.
- ★ It was not reported outside of Africa until 2003 and historically has been confined to West Africa and the Congo Basin.
- ★ In 2003, the first outbreak outside of Africa occurred when rodents from Ghana carrying monkeypox virus were sent to Texas. These rodents were sold to distributors and kept with American native prairie dogs. The prairie dogs became infected before being sold as pets. This resulted in 47 people infected in the United States.

CURRENT OUTBREAK AND HOTSPOTS

- ★ As of August 2022, there have been over 15,000 cases reported in the US. California, New York, Georgia, Florida, and Texas are hotspots. Approximately 10% of cases are from Texas.
- ★ Monkeypox has been primarily, but not only, reported in men who have sex with men, but it is not a sexually transmitted disease.
- ★ Current case data can be found at <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html>

TRANSMISSION

- Primarily occurs through sustained, close skin-on-skin contact with a person who has monkeypox such as intimate contact (oral, anal, vaginal intercourse or any contact with the genitals or anus, kissing), or being in a closely packed crowd.
- Can also occur through respiratory secretions and touching objects like towels and sheets that have been used by someone with monkeypox
- The virus can also spread from a pregnant person to the fetus through the placenta.

RISK FACTORS

High risk individuals (risk for severe illness) include: those who may have a weakened or immature immune system such as persons with HIV/AIDS, cancer, pregnant persons and their fetuses, and children under the age of eight

In this recent outbreak, monkeypox related deaths have been rarely reported in the United States and worldwide.

PREVENTION

Healthcare Infection Control

PPE can be used to prevent the spread of disease and includes gowns, gloves, face shields, and NIOSH approved particulate respirators equipped with an N95 filter or higher.

Vaccines

There are currently two vaccines which can be used for the prevention of monkeypox.

- The Jynneos vaccine, the primary vaccine being used in this outbreak, is a non-replicating live virus vaccine administered subcutaneously twice, 4 weeks apart. A person is considered fully vaccinated after 2 weeks after the 2nd dose.
- The ACAM2000 vaccine is a live virus vaccine that is inoculated into the skin surface, causing a lesion post inoculation. This growing virus can spread to other parts of the body so patients receiving this vaccine must take precautions to prevent the spread of the vaccine virus. A person is considered fully vaccinated within 28 days.

Post- Exposure Prophylaxis

The vaccine can be used as post-exposure prophylaxis within 4 days of exposure and must be administered before symptoms are present.

Treatment

TPOXX[®] is the most common of four potential treatment options for Monkeypox. Please reference the Treatment Literature Review document for more details.

Additional Resources and References



F
E
E
D
B
A
C
K



S
U
R
V
E
Y