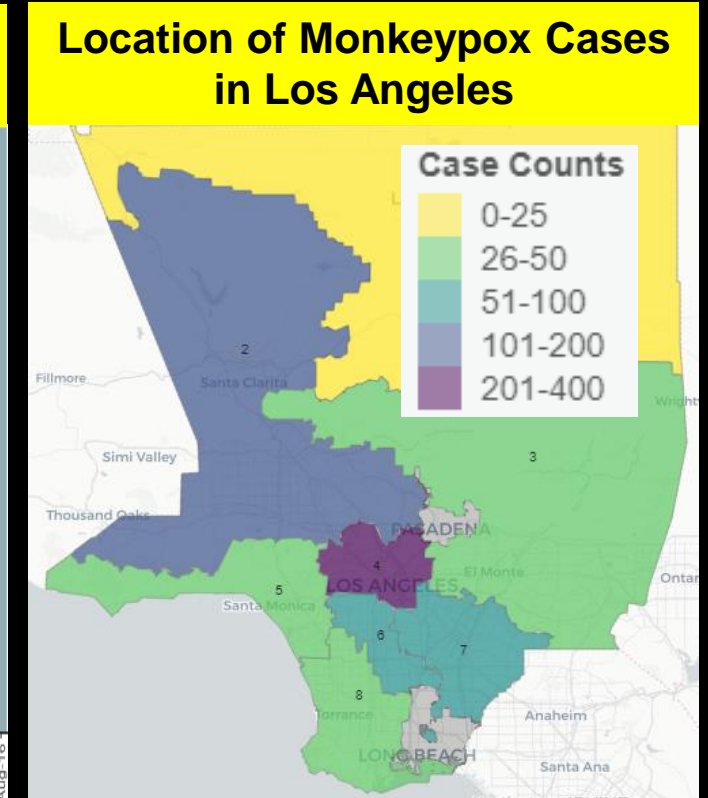
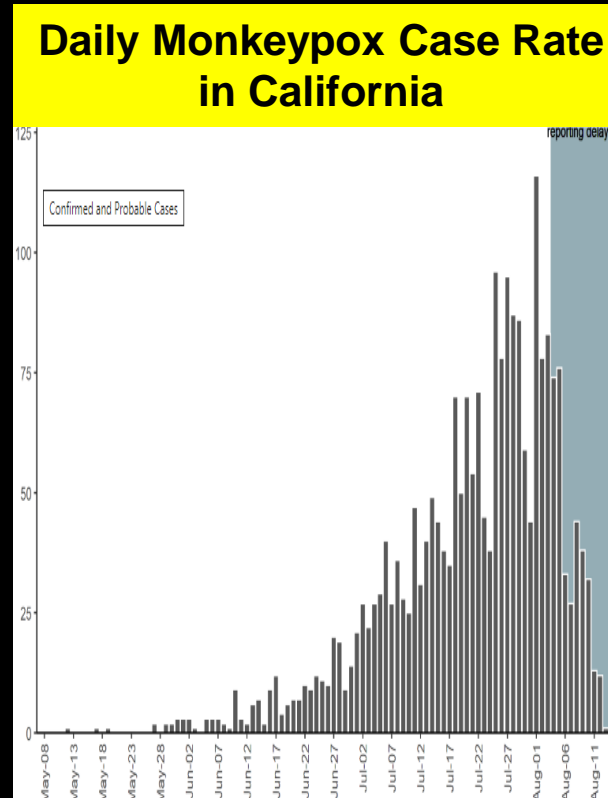


Monkeypox Overview

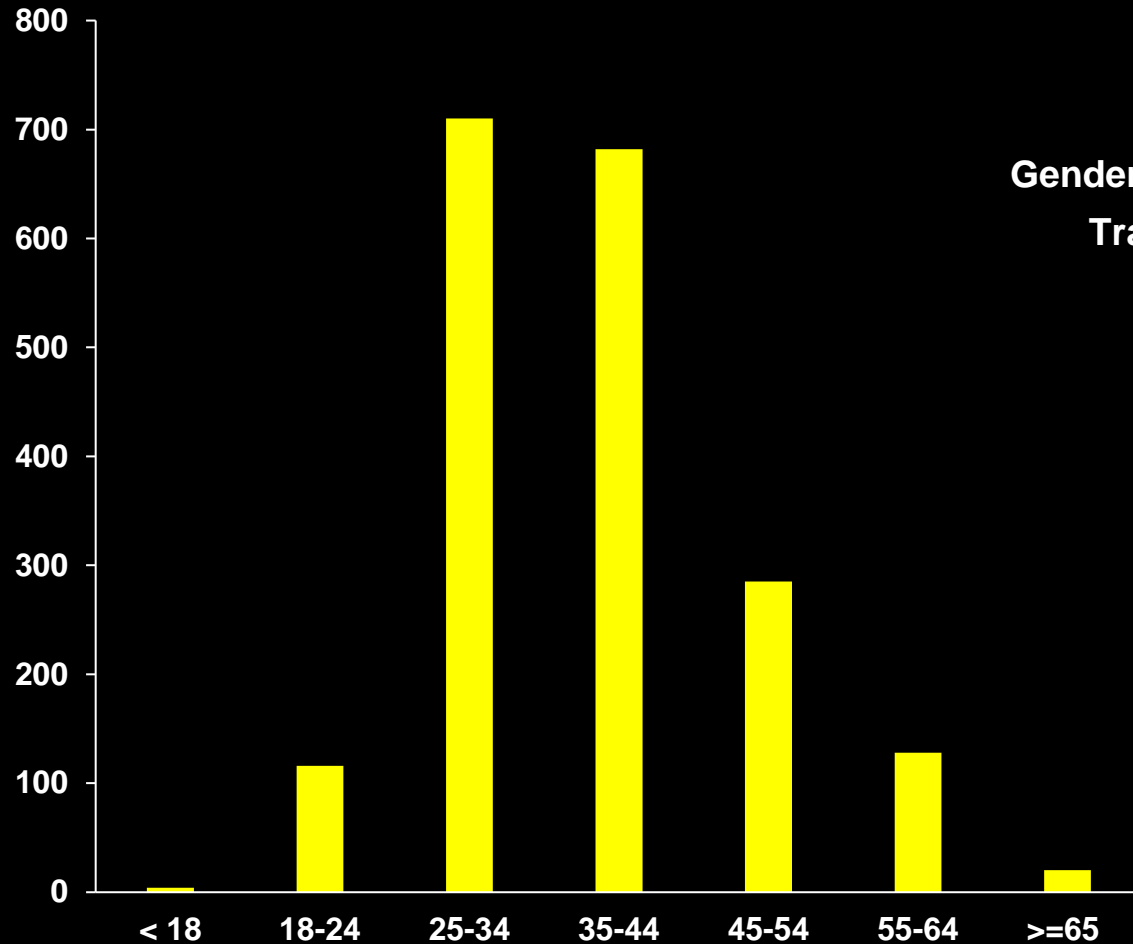
Data as of August 17, 2022

- **39,047 cases outside of usual area in Africa**
 - **US: 13,516 cases**
 - **California: 2356 cases**
 - **LA County: 993 cases**
 - **>33,000 vaccine doses have been given**
 - **GLA: 5 cases**
 - **2 treated with tecovirimat**

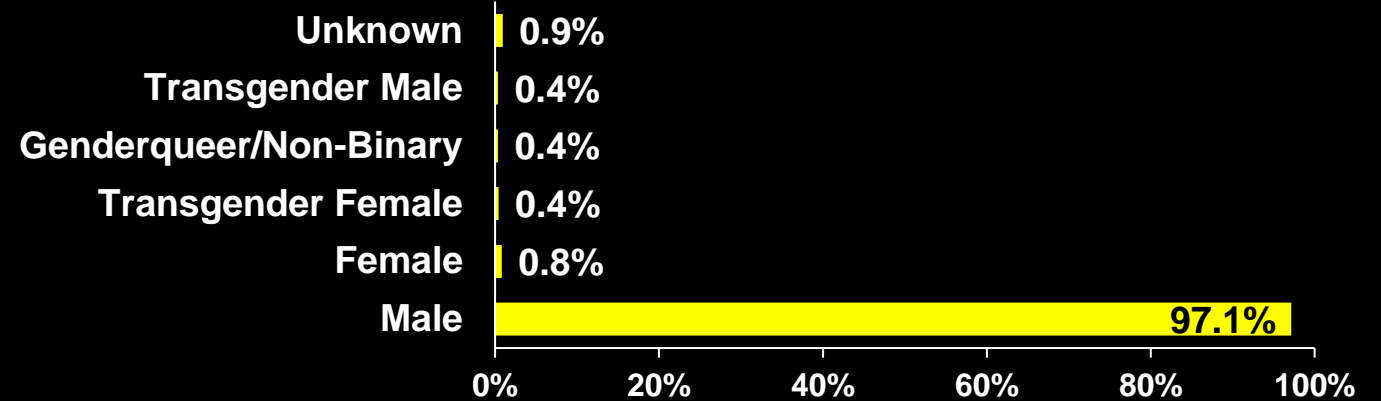


Monkeypox Demographics California – 8/15/2022

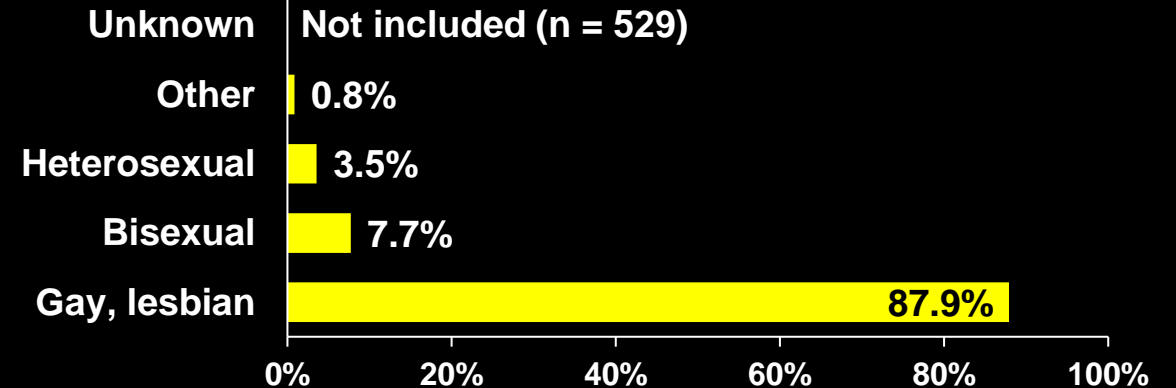
Age Distribution



Gender



Sexual Orientation



Virology and Epidemiology

- **Monkeypox virus (an Orthopoxvirus)**
 - Related to variola, vaccinia, cowpox, molluscum contagiosum, orf, etc.
 - West African clade (current outbreak): 1% mortality
 - Central African (Congo Basin clade): up to 10% mortality
 - Circulates in small African mammals; can infect prairie dogs
 - Unknown whether asymptomatic carriage occurs
- **Endemic in west and central Africa**
 - Smallpox vaccination known to provide protection (~85%)
 - <40,000 reported human cases 1970 - 2021

Clinical Symptoms in Current Outbreak

- **Prodromal symptoms (fever, adenopathy) mild or not occurring**
- **Skin rash in all patients**
 - Lesions in different phases of development seen side-by-side
 - Either scattered or diffuse, often starts in genital & perianal areas
 - Firm, deep-seated, well-circumscribed, painful, itchy, with an erythematous base; may become umbilicated
- **Frequent concurrent STIs; proctitis**
- **Severe disease appears uncommon: <1% hospitalized**
 - Hemorrhagic disease
 - Sepsis
 - Confluent lesions
 - Encephalitis

Cutaneous Lesions in Current Outbreak



Transmission

- **Historically due to animal-to-human transmission**
- **Current outbreak due to person-to-person transmission**
 - **Primarily due to skin-to-skin contact with infected body fluids or fomites**
 - **Respiratory droplet possible but believed to require prolonged contact (>3 hours)**
 - **Crosses the placenta; congenital monkeypox is theoretically possible**
- **Examples of high and intermediate risk exposures**
 - **Shared towels and bedding (infectious body fluids and scabs may be present)**
 - **Skin-to-skin contact with a patient who has monkeypox**
 - **Being inside the patient's room or within 6 feet of a patient during any procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates, without wearing an N95 or equivalent respirator & eye protection**
- **Not transmitted during incubation period (prior to symptom development)**

Infection Prevention



- **Call Infection Prevention**
- **Patient management**
 - **Place surgical mask over patient's mouth and nose**
 - **Place single patient room (negative pressure preferred, not required)**
 - **Patients remain infection until lesions form scabs, scabs fall off, and a fresh layer of skin forms**
 - **Waste from West African clade managed as standard medical waste**
- **Staff PPE: Eye protection, N95 respirator, gown, gloves**
 - **One historical case of transmission to HCW (did not use resp. protection while changing bedding for pt with active lesions)**

Management of Suspect Outpatient Cases

- **Swab skin lesions**
- **While results are pending instruct patient to self-isolate**
 - **Avoid contact with other people and animals, including pets**
 - **Do not share towels, linens, kitchen utensils etc.**
 - **Avoid contact with upholstered furniture**
 - **Avoid use of contact lenses, do not shave involved areas**
 - **Separate bathroom preferred, otherwise disinfect after use**
 - **No special waste management**
 - **Monitor for symptoms for 21 days after last exposure**

Diagnostic Testing

- Obtain swabs if:
 - Classic monkeypox rash OR
 - Rash that could be monkeypox in a person with epidemiologic risk factors:
 - Contact with a person with similar appearing rash
 - Close in-person contact with people in a social network experiencing monkeypox
- PCR available through VA Public Health Research Lab
 - Lab performs generic orthopoxvirus testing; positive sent to CDC for confirmation
- Sample collection: vigorously swab lesions with paired sets of **DRY** swabs
- Place swabs in a sterile cup (e.g., urine cup), **NOT viral transport media**
- Report positive tests to LACPH (Monkeypox Confidential Morbidity Report (CMR))

Diagnosis of STI DOES NOT rule out co-infection

Los Angeles County Monkeypox Vaccination Eligibility – August 12, 2022

- **Gay and bisexual men and transgender women \geq 18 years old**
 - Had multiple or anonymous sex partners in the last 14 days including engaging in survival and/or transactional sex
 - Diagnosed with gonorrhea or early syphilis within the **past 12 months**
 - Are on HIV pre-exposure prophylaxis (PrEP)
 - Patients can sign up online (paused as of 8/15/2022)
- **Vaccine (JYNNEOS) is also available by invitation by Public Health to**
 - People with a high- or intermediate risk contact with a confirmed monkeypox case
 - Persons who attended an event where there was high risk of exposure to a confirmed monkeypox case
 - Homeless patients with high-risk behaviors
 - High-risk cohorts in the LA County jail

Smallpox Vaccination

- **Smallpox vaccine very likely provides protection against smallpox (and therefore monkeypox) for ≥ 30 years. :**
- **Smallpox vaccination in Veterans**
 - **If born before 1970 received vaccine as a routine childhood vaccination**
 - **Service members were routinely vaccinated against smallpox until 1990**
 - **In the 5 years after September 2001, one million service members were vaccinated against smallpox**
 - **Routine smallpox vaccination not now recommended for military personnel**
 - **While the presence of a typical vaccination scar is strong evidence of having received smallpox vaccine, absence of a scar does not necessarily indicate that a Veteran was not vaccinated.**

Post Exposure Prophylaxis

High Degree of Exposure

- **Recommendations: Monitor for 21 days, PEP within 4 – 14 days**
- **Characteristics – any of the following**
 - **Unprotected contact between a person's broken skin or mucous membranes & the skin lesions or bodily fluids from a monkeypox patient (e.g., inadvertent splashes of saliva to the eyes or oral cavity), or contaminated materials (e.g., linens, clothing)**
 - **Being inside the patient's room or within 6 feet of a patient during any procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates (e.g., shaking of soiled linens), without wearing an N95 or equivalent respirator & eye protection**

Post Exposure Prophylaxis

Intermediate Degree of Exposure

- **Recommendations: Monitor for 21 days, individualized decision-making regarding PEP**
- **Characteristics – any of the following**
 - **Being within 6 feet for 3 hours or more of an unmasked patient without wearing, at a minimum, a surgical mask**
 - **Unprotected contact between an exposed individual's intact skin & the skin lesions or bodily fluids from a patient with monkeypox or their soiled materials (e.g., linens, clothing)**
 - **Contact between an individual's clothing & a patient's skin lesions or bodily fluids, or their soiled linens or dressings (e.g., turning, bathing, or assisting with transfer) while wearing gloves but not wearing a gown**

Post Exposure Prophylaxis

Low/Uncertain Degree of Exposure

- **Recommendations: Monitoring, No PEP**
- **Low Risk:**
 - Entered the patient room without wearing all recommended PPE in the absence of high risk or intermediate risk exposures
- **No Risk:**
 - During all entries in the patient care area or room, wore gown, gloves, eye protection, and at minimum, a surgical mask

Anti-Viral Treatment

- **Tecovirimat (TPOXX, ST-246) – CDC EA-IND for monkeypox**
 - Inhibitor of VP37 envelope protein – prevents cellular transmission
 - PO or IV formulations available
 - Most clinical experience with monkeypox (still very sparse)
- **Vaccinia Immune Globulin IV (VGIV) – CDC EA-IND for monkeypox**
 - Approved for progressive vaccinia, severe generalized vaccinia
- **Cidofovir – CDC EA-IND for monkeypox**
 - Monophosphate nucleotide analog used for CMV
- **Brincidofovir: smallpox FDA approved; monkeypox pending CDC EA-IND**
 - PO derivative of cidofovir
- **Trifluridine**
 - If ocular disease is present

ACAM 2000 vs JYNNEOS

Smallpox vaccine had VE of 85% against Monkeypox

	ACAM2000	JYNNEOS
Vaccine virus	Replication-competent vaccinia virus	Replication-deficient Modified vaccinia Ankara
“Take”	“Take” occurs	No “take” after vaccination
Inadvertent inoculation and autoinoculation	Risk exists	No risk
Serious adverse event	Risk exists	Fewer expected
Cardiac adverse events	Myopericarditis in 5.7 per 1,000 primary vaccinees	Risk believed to be lower than that for ACAM2000
Effectiveness	Comparison of immunologic response and “take” rates to ACAM2000 vs Dryvax*	Comparison of immunologic response to ACAM2000 & animal studies
Administration	Percutaneously, multiple puncture technique; single dose	Subcutaneously in 2 doses, 28 days apart