

Infectious Disease Outbreaks and Impact on LGBTQIA+ People

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**NATIONAL LGBTQIA+ HEALTH
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- Integrated primary care model, including HIV and transgender health services

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- Research, Education, Policy



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- Training and Technical Assistance
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Disclosures

In-kind research support from binx (gonorrhea and chlamydia testing)

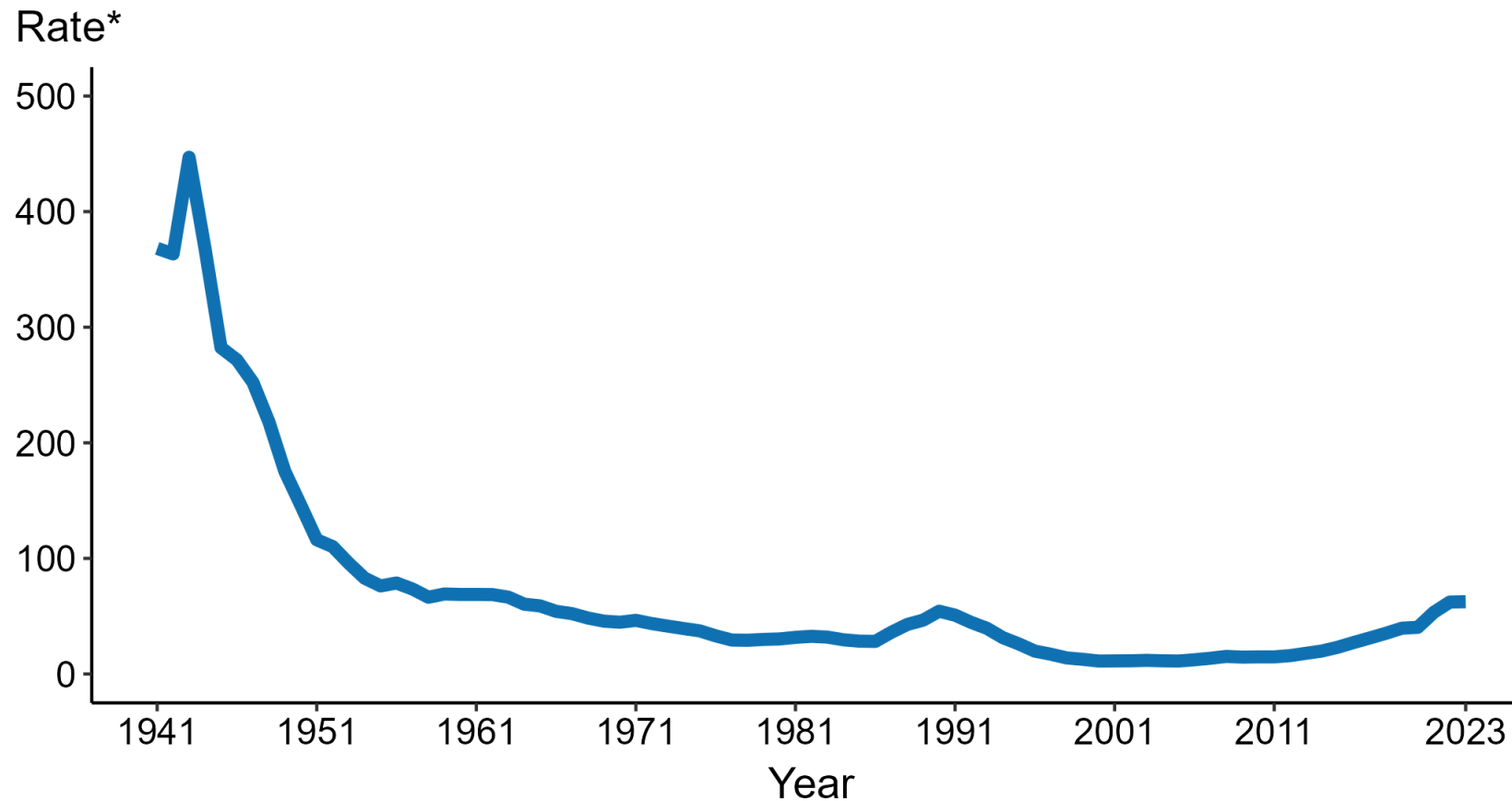
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Learning objectives

1. Describe the current epidemiology of syphilis among MSM and other populations
2. Identify how to implement the latest recommendations in STI screening, including syphilis screening
3. Summarize updates in the mpox outbreak, including features of clade I infection and the latest research on mpox treatment

Syphilis

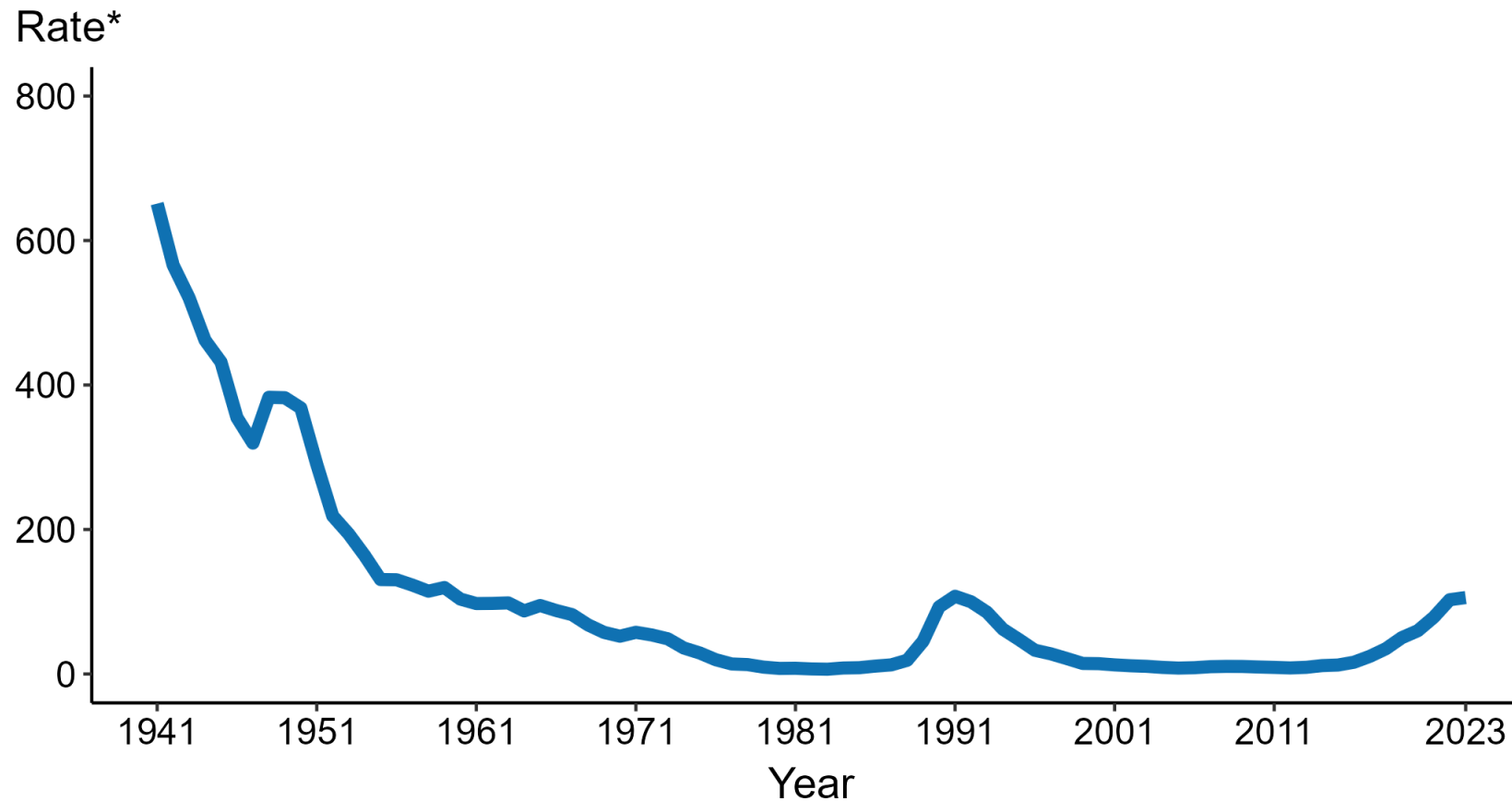
Syphilis — Rates of Reported Cases by Year, United States, 1941–2023



* Per 100,000

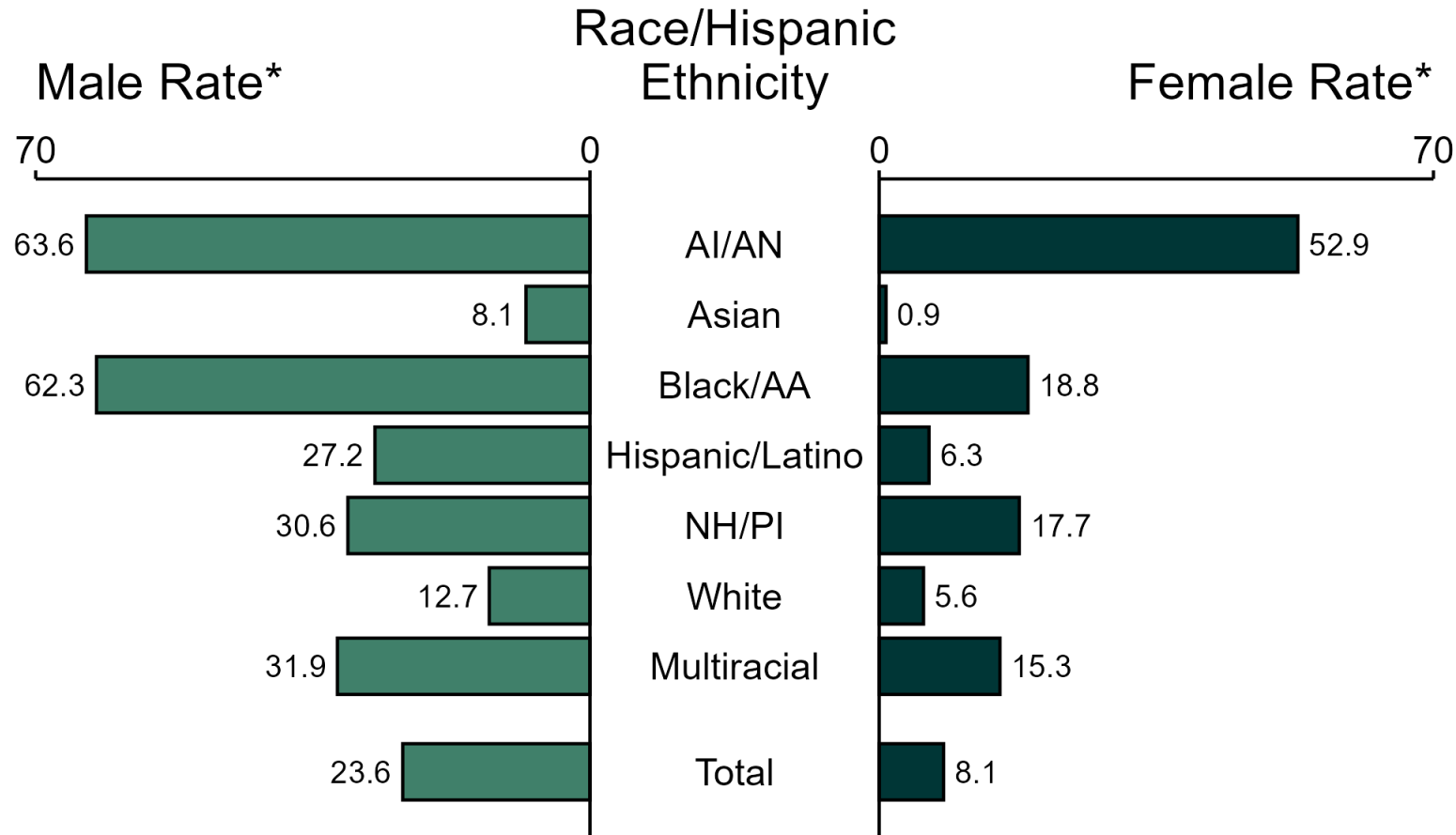
NOTE: Includes all stages of syphilis and congenital syphilis.

Congenital Syphilis — Rates of Reported Cases by Year of Birth, United States, 1941–2023



* Per 100,000 live births

Primary and Secondary Syphilis — Rates of Reported Cases by Race/Hispanic Ethnicity and Sex, United States, 2023

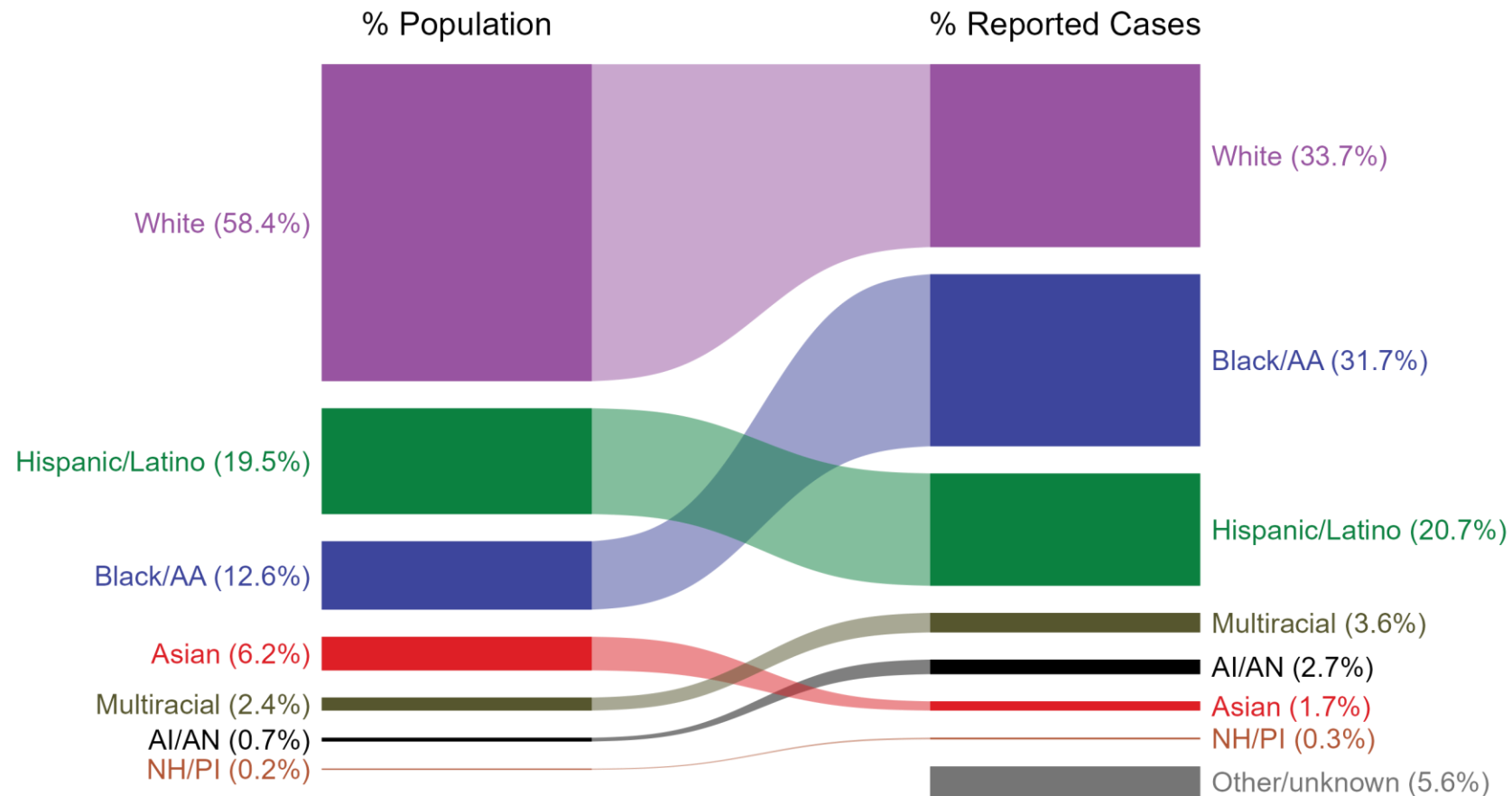


* Per 100,000

ACRONYMS: AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander

NOTE: In 2023, 2,292 primary and secondary syphilis cases among men (5.8%) and 647 cases among women (4.7%) had missing, unknown, or other race and were not reported to be of Hispanic ethnicity. These cases are included in the total rates.

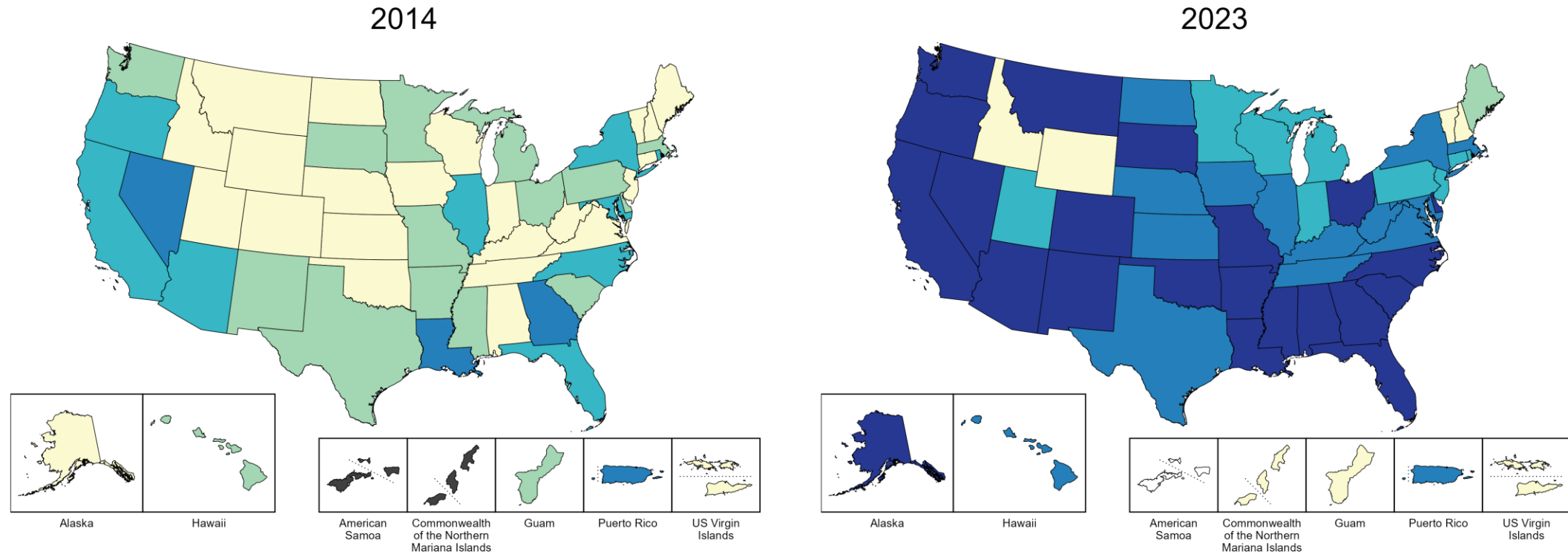
Primary and Secondary Syphilis — Total Population and Reported Cases by Race/Hispanic Ethnicity, United States, 2023



ACRONYMS: AI/AN = American Indian or Alaska Native; Black/AA = Black or African American; NH/PI = Native Hawaiian or other Pacific Islander

NOTE: In 2023, a total of 2,947 primary and secondary (P&S) syphilis cases (5.6%) had missing, unknown, or other race and were not reported to be of Hispanic ethnicity. These cases are included in the “other/unknown” category.

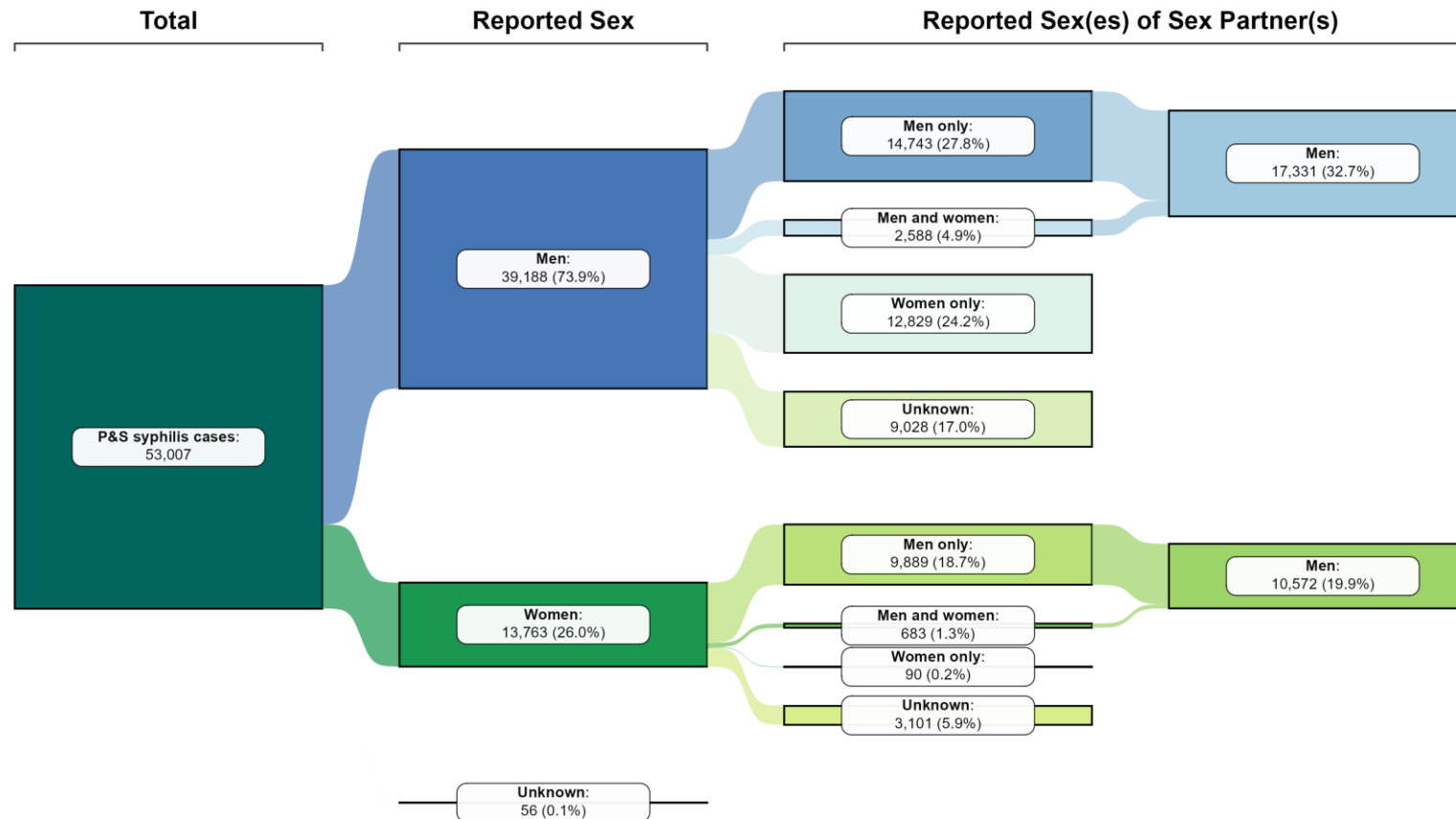
Primary and Secondary Syphilis — Rates of Reported Cases by Jurisdiction, United States and Territories, 2014 and 2023



Rate* No cases reported 0.5–4.0 4.1–6.6 6.7–10.1 10.2–15.0 15.1–84.3 Unavailable

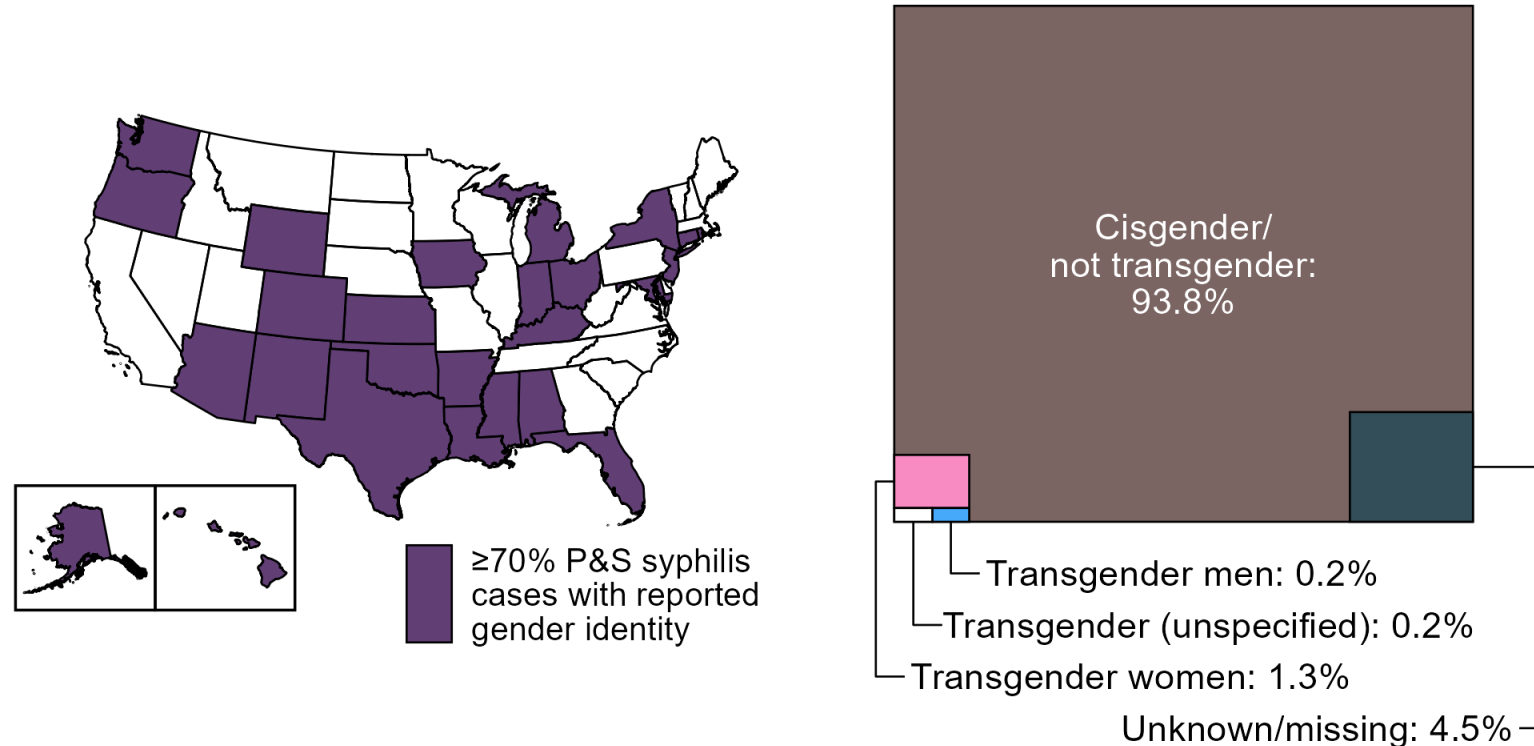
* Per 100,000

Primary and Secondary Syphilis — Distribution of Cases by Sex and Sex of Sex Partners, United States, 2023



NOTE: Percentages represent the number of primary and secondary (P&S) syphilis cases among the 53,007 total P&S syphilis cases reported in 2023.

Primary and Secondary Syphilis — Distribution of Cases by Gender Identity, 26 States* and the District of Columbia, 2023

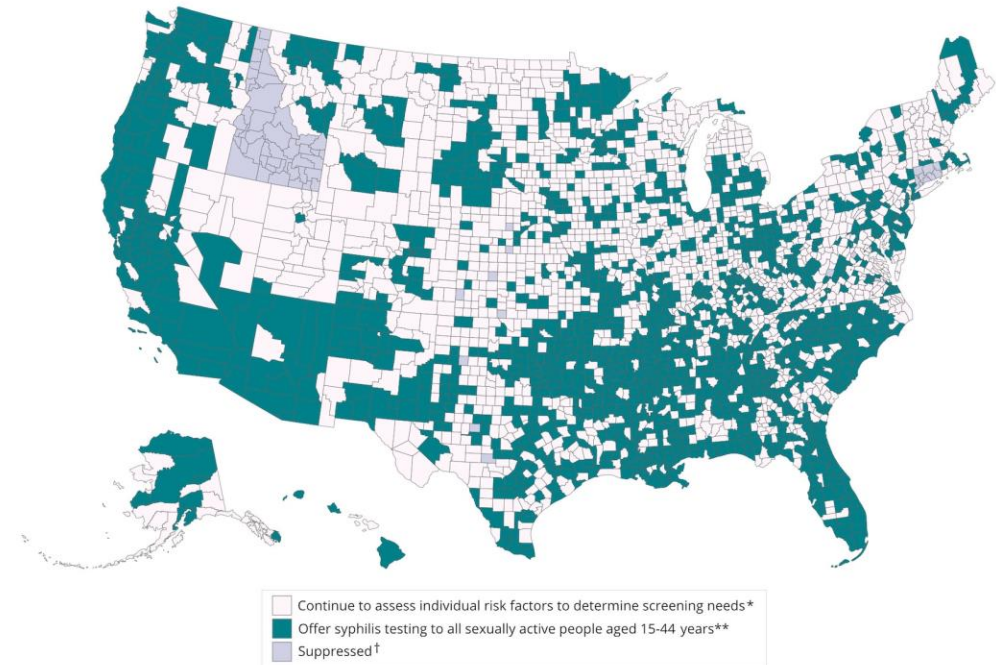


* Jurisdictions reporting gender identity for $\geq 70\%$ reported primary and secondary syphilis cases in 2023; in 2023, 35 states and the District of Columbia reported on gender identity for primary and secondary syphilis cases

ACRONYMS: P&S syphilis = Primary and secondary syphilis

Screen all sexually active people ages 15-44 years for syphilis.

- “Historically, syphilis screening and interventions have targeted individual risk factors, but for many sexually active persons, **their most significant risk factor is living in a community with high rates of syphilis.**”
- Screen for syphilis among sexually active people ages 15-44 years when the local rate of early syphilis exceeds 4.6/100,000.
- This applies to 72% of the U.S. population.



Offer doxy PEP to MSM and transgender women

BOX 1. CDC recommendations for use of doxycycline as postexposure prophylaxis for bacterial sexually transmitted infections prevention

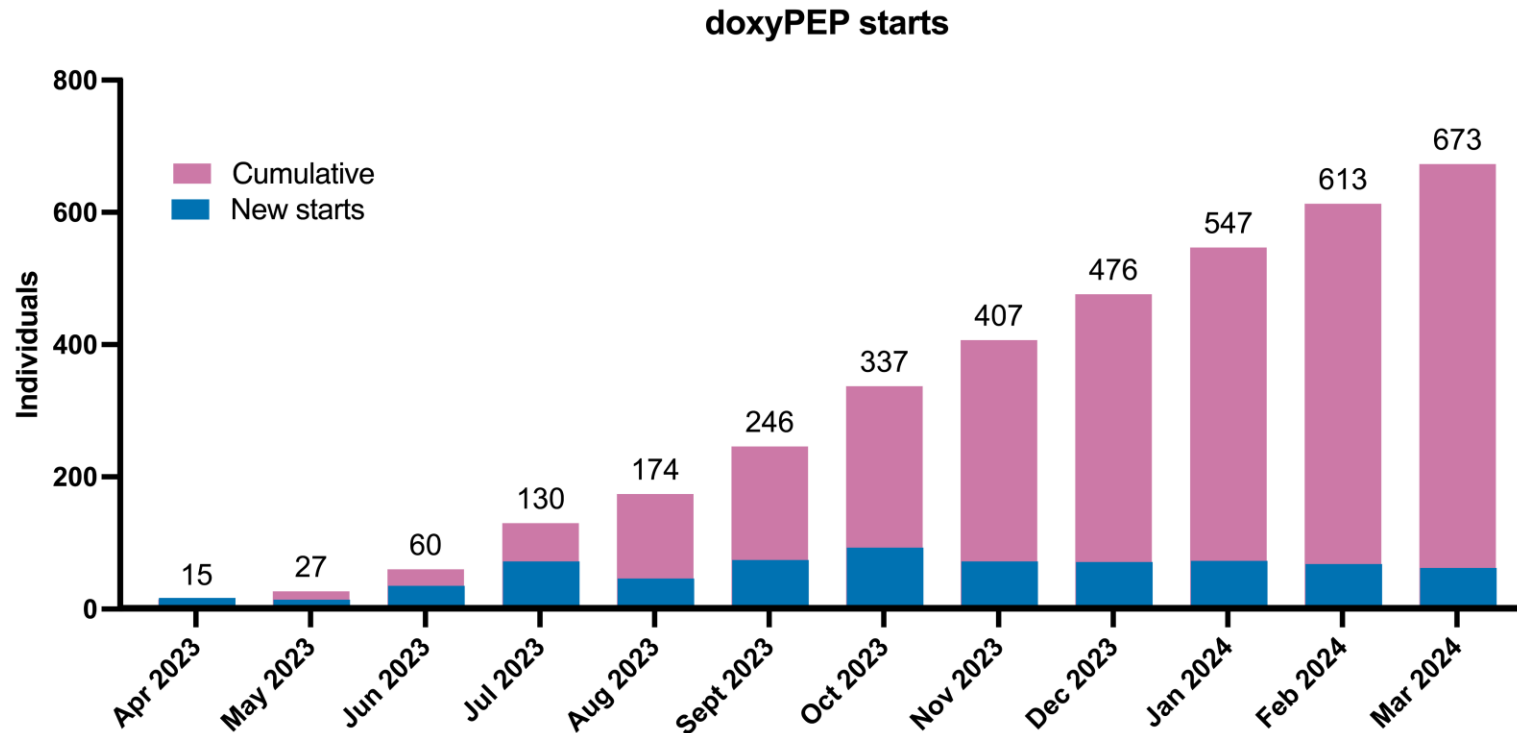
Recommendation*	Strength of recommendation and quality of evidence†
<ul style="list-style-type: none">• Providers should counsel all gay, bisexual, and other men who have sex with men (MSM) and transgender women (TGW) with a history of at least one bacterial sexually transmitted infection (STI) (specifically, syphilis, chlamydia or gonorrhea) during the past 12 months about the benefits and harms of using doxycycline (any formulation) 200 mg once within 72 hours (not to exceed 200 mg per 24 hours) of oral, vaginal, or anal sex and should offer doxycycline postexposure prophylaxis (doxy PEP) through shared decision-making. Ongoing need for doxy PEP should be assessed every 3–6 months.	AI High-quality evidence supports this strong recommendation to counsel MSM and TGW and offer doxy PEP.
<ul style="list-style-type: none">• No recommendation can be given at this time on the use of doxy PEP for cisgender women, cisgender heterosexual men, transgender men, and other queer and nonbinary persons.	Evidence is insufficient to assess the balance of benefits and harms of the use of doxy PEP

*Although not directly assessed in the trials included in these guidelines, doxy PEP could be discussed with MSM and TGW who have not had a bacterial STI diagnosed during the previous year but will be participating in sexual activities that are known to increase likelihood of exposure to STIs.

† See Table.

Results

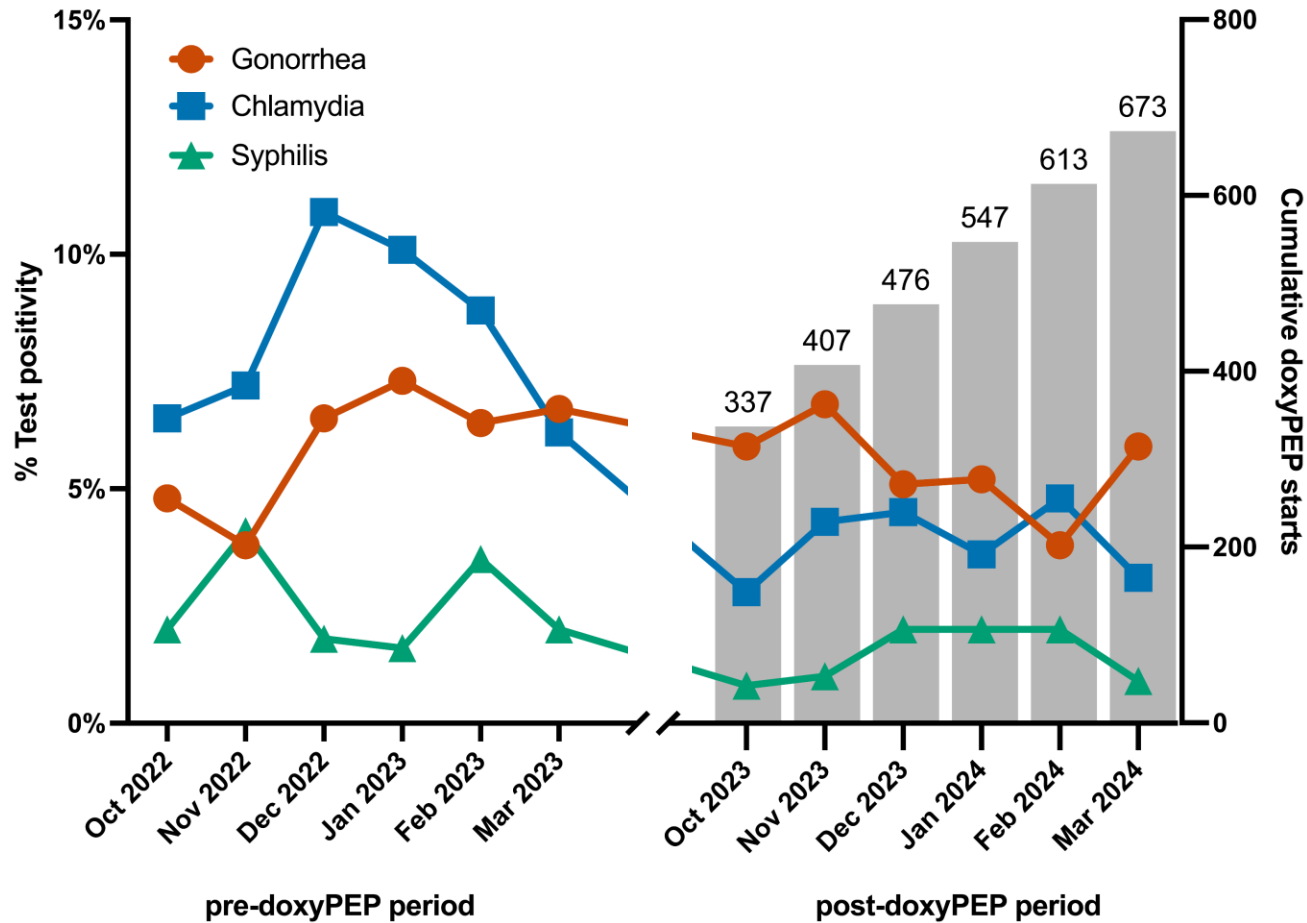
- Between April 1, 2023 – March 31, 2024, 673 people started doxyPEP



Slide courtesy of Dr. Jana Jarolimova



Results



Change from pre-doxyPEP to post-doxyPEP:

Gonorrhea: 6.0% to 5.4%
RR 0.90 (0.70-1.15)

Chlamydia: 8.3% to 3.8%
RR 0.46 (0.35-0.61)

Syphilis: 2.4% to 1.4%
RR 0.59 (0.37-0.95)



Slide courtesy of Dr. Jana Jarolimova



Мрор

A case

- A 30-year-old cisgender man presents with a 3-day history of bumps on the penis and groin
- 5 lesions today, minimally painful, no systemic symptoms
- On oral PrEP; no chronic medical problems
- Condomless sex with two cisgender men in the past month
- Completed mpox vaccine series 2 years ago



Representative image

Who has been most affected by mpox in the global clade II outbreak?

TABLE. Demographic characteristics of persons with outbreak-associated mpox (N = 29,988)* — United States, May 2022–April 12, 2023

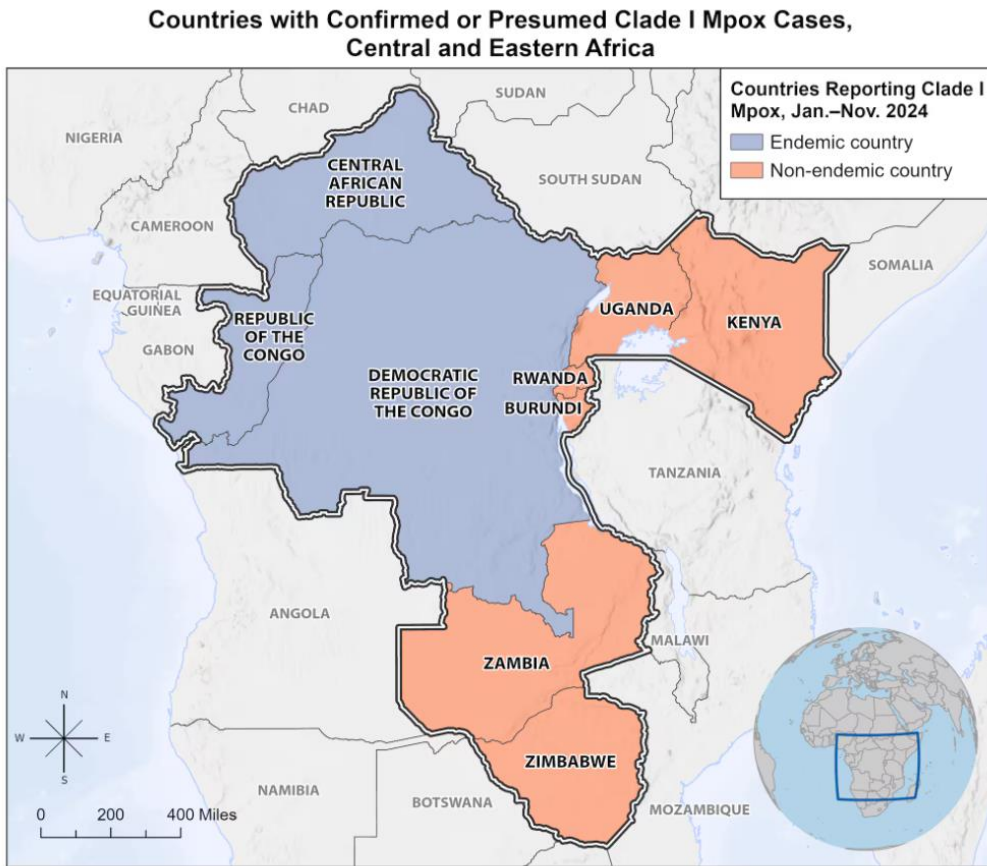
Characteristic (no. with available data)	No. of cases (%)
Gender (29,988)	
Cisgender man	28,535 (95)
Cisgender woman	878 (3)
Transgender man	67 (<1)
Transgender woman	273 (1)
Other gender	235 (1)
Age group, yrs (29,988)	
≤10	45 (<1)
11–15	16 (<1)
16–20	678 (2)
21–55	27,936 (93)
>55	1,313 (4)
Race and ethnicity (28,350)[†]	
American Indian or Alaska Native, non-Hispanic	124 (<1)
Asian, non-Hispanic	805 (3)
Black or African American, non-Hispanic	9,359 (33)
Native Hawaiian or other Pacific Islander, non-Hispanic	78 (<1)
White, non-Hispanic	8,373 (30)
Hispanic or Latino	8,798 (31)
Multiple races or other	813 (3)

* <https://www.cdc.gov/poxvirus/mpox/response/2022/demographics.html> (Accessed April 21, 2023).

[†] Data are missing for 1,638 cases.

- Most of the affected cisgender men have been gay, bisexual, or other men who have sex with men.
- 38% of cases have occurred among people with HIV.
- Most deaths have occurred among people with HIV-associated immunocompromise.

Clade I outbreak in central Africa



- Since January 1, 2024, Democratic Republic of Congo has had 33,000 suspected mpox cases and > 1,000 deaths.
- Clade I cases outside Africa:
 - Sweden 8/2024
 - Thailand 8/2024
 - India 9/2025
 - Germany 10/2024
 - United Kingdom, USA, Canada 11/2024
 - Belgium, Oman, Pakistan 12/2024
 - France, China 1/2025

Mpox rash features and evolution

Stage	Stage Duration	Characteristics
Enanthem		<ul style="list-style-type: none">• Sometimes, lesions first form on the tongue and in the mouth.
Macules	1–2 days	<ul style="list-style-type: none">• Macular lesions appear.
Papules	1–2 days	<ul style="list-style-type: none">• Lesions typically progress from macular (flat) to papular (raised).
Vesicles	1–2 days	<ul style="list-style-type: none">• Lesions then typically become vesicular (raised and filled with clear fluid).
Pustules	5–7 days	<ul style="list-style-type: none">• Lesions then typically become pustular (filled with opaque fluid) – sharply raised, usually round, and firm to the touch (deep seated).• Finally, lesions typically develop a depression in the center (umbilication).• The pustules will remain for approximately 5 to 7 days before beginning to crust.
Scabs	7–14 days	<ul style="list-style-type: none">• By the end of the second week, pustules have crusted and scabbed over.• Scabs will remain for about a week before beginning to fall off.

- Incubation period 3-17 days
- Lesions are often painful or itchy (64%).
- Lesions are often asynchronous.
- Most people have fewer than 50 lesions; occasionally, only a single lesion is present.

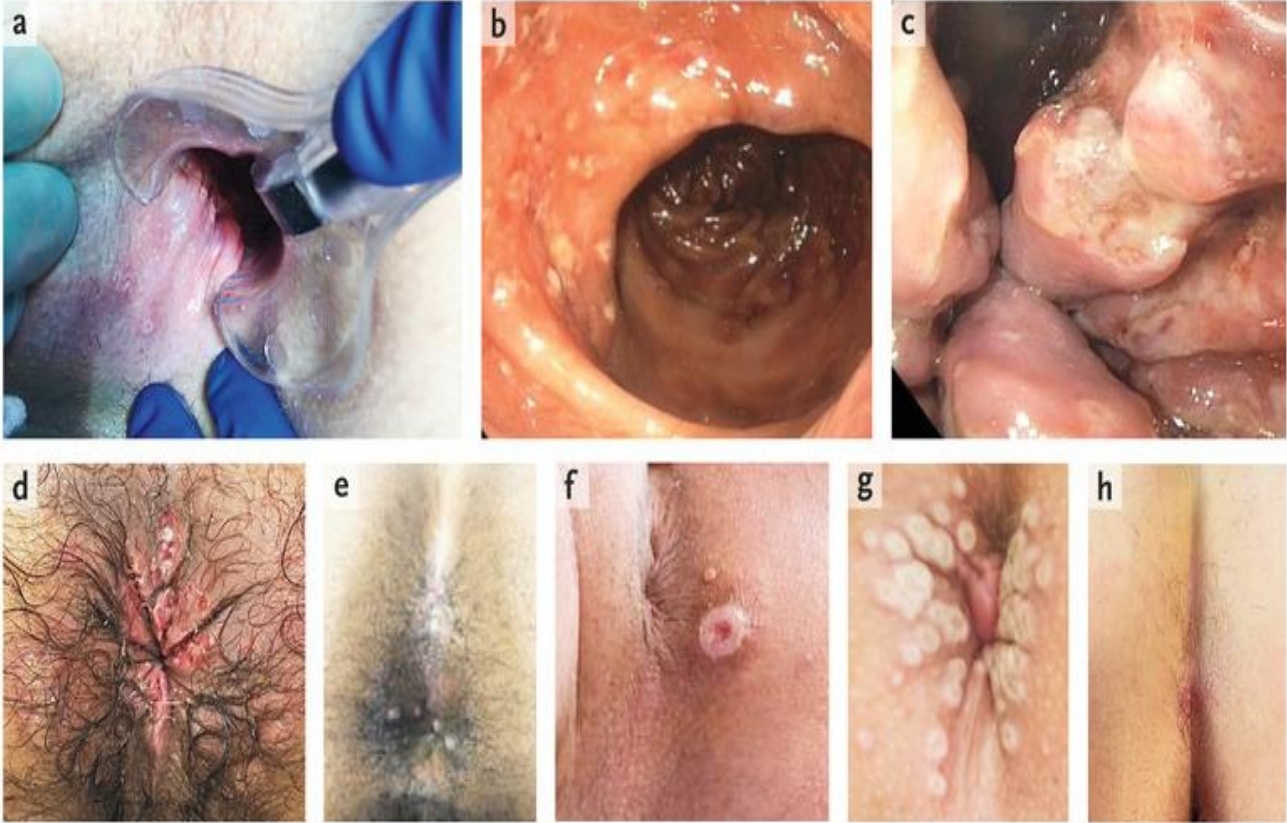
Examples of mpox lesions



Examples of mpox lesions



Examples of mpox lesions



Examples of “atypical” mpox presentations

- A solitary genital lesion, which may be mistaken for a wart or chancre depending on the stage of evolution
- Whitlow-like lesions on the finger or thumb
- Sore throat/pharyngitis, nasal congestion, cough

People with advanced HIV are at risk for severe disease with mpox.

Miller MJ, Cash-Goldwasser, MMWR, 2022

TABLE 1. Characteristics of hospitalized patients with severe manifestations of monkeypox* for whom CDC provided clinical consultation (N = 57) — United States, August 10–October 10, 2022

Characteristic	No. (%)
Median age, yrs (range)	34 (20–61)
Sex	
Male	54 (94.7)
Race and ethnicity	
Black or African American, non-Hispanic	39 (68.4)
White, non-Hispanic	8 (14.0)
Hispanic or Latino	8 (14.0)
Asian, non-Hispanic	1 (1.8)
Multiple races, non-Hispanic	1 (1.8)
Experiencing homelessness[†]	13 (22.8)
Any immunocompromising condition[§]	51 (89.5)
HIV infection	47 (82.5)
History of solid organ transplantation	3 (5.3)
Hematologic malignancy (current chemotherapy)	2 (3.5)
Pregnant	3 (5.3)
Clinical manifestation[¶]	
Dermatologic	57 (100.0)
Mucosal ^{**}	39 (68.4)
Pulmonary	12 (21.1)
Ocular	12 (21.1)
Deep tissue (muscle or bone)	5 (8.8)
Neurologic	4 (7.0)
Monkeypox-directed therapy^{††}	
Tecovirimat (oral)	53 (93.0)
Tecovirimat (intravenous)	37 (64.9)
VIGIV	29 (50.9)
Cidofovir ^{††}	13 (22.8)
Received ICU-level care	17 (29.8)
STI coinfection^{§§}	16 (28.1)



Severe manifestations

- Confluent, necrotic skin lesions
- Phimosis and urinary retention
- Secondary bacterial infections
- Ocular infection
- Encephalitis
- Disseminated infection with shock and death



Characteristics of 47 people with HIV hospitalized for severe mpox

TABLE 2. Laboratory and treatment characteristics of hospitalized patients with HIV infection and severe monkeypox* for whom CDC provided clinical consultation (N = 47) — United States, August 10–October 10, 2022

Characteristic (no. with information available)	No. (%)
HIV CD4, cells/mm³ (43)	
<50	31 (72.1)
50–200	9 (20.9)
>200	3 (7.0)
HIV Treatment (47)	
On ART at the time of monkeypox diagnosis	4 (8.5)



Abbreviation: ART = antiretroviral therapy.

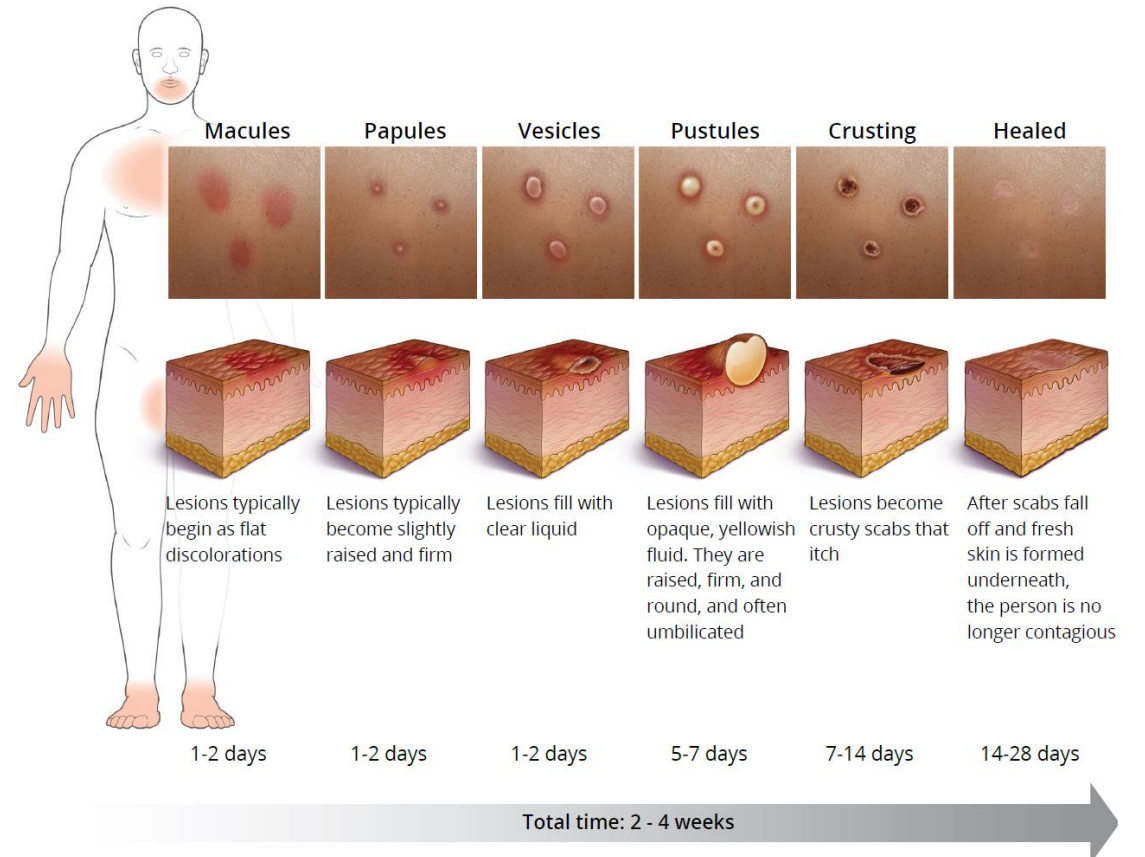
* Severe manifestations of monkeypox include, but are not limited to, the clinical findings listed at <https://emergency.cdc.gov/han/2022/han00475.asp>.

Who should be tested for mpox?

New, compatible clinical syndrome, especially if any of the following are present in the past 21 days:

- Close contact with a person known or suspected to have mpox
- Close contact with a person with a similar rash
- Part of a sexual network with mpox transmission (e.g., men who have sex with men, MSM)
- Residence or travel to endemic areas of Africa

MPOX LESION PROGRESSION DESCRIPTION AND TIMELINE



Mpox in a cisgender woman with no known epidemiologic risk factors



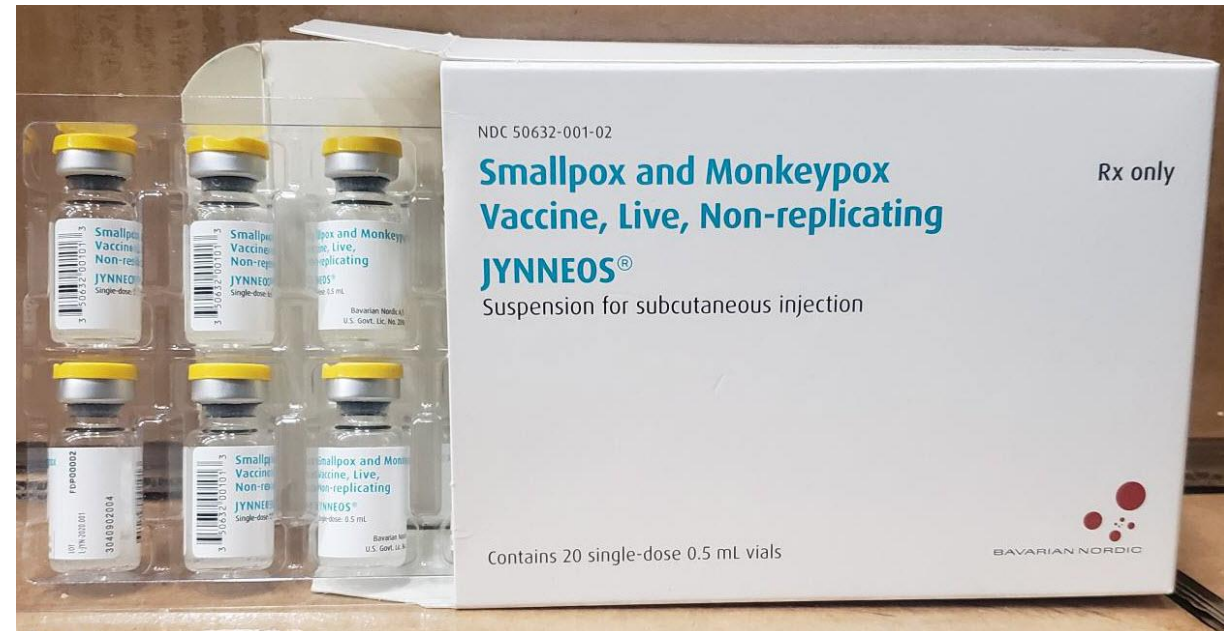
Specimen collection for mpox testing

- Acceptable specimen types include:
 - Dry swab of crusts and/or fluid from an open lesion
 - Dry swab of intact vesicles or pustules
 - Scab from a lesion
- Obtain samples from different-appearing lesions, if possible.
- Unroofing vesicles or pustules is unnecessary and not recommended.
- Use a synthetic (not cotton) swab.
- Instructions may depend on the laboratory.



Vaccination with MVA-BN is effective.

- Replication-deficient *Vaccinia* virus
- Licensed as a series of two subcutaneous injections, 4 weeks apart
- The only contraindication is severe allergy to a vaccine component (ciprofloxacin, gentamicin, egg).
- Side effects include injection site reactions; serious side effects are rare.
- The vaccine appears to be safe in people with HIV and immunogenic in people with CD4 counts > 100.



ACAM2000 versus MVA-BN

TABLE 3. Contraindication to administration of ACAM2000 and JYNNEOS to recipients or their household contacts with certain conditions — United States, 2022

Clinical characteristic	Contraindication to receipt of ACAM2000			Contraindication to receipt of JYNNEOS
	Vaccine recipient with condition		Household contact with condition*	
	Primary vaccination	Revaccination		
History or presence of atopic dermatitis	Y	Y	Y	—
Other active exfoliative skin conditions [†]	Y	Y	Y	—
Immunosuppression [§]	Y	Y	Y	—
Pregnancy [¶]	Y	Y	Y	—
Age <1 year ^{**}	Y	Y	Y	—
Breastfeeding ^{††}	Y	Y	—	—
Serious vaccine component allergy	Y	Y	—	Y
Known underlying heart disease (e.g., coronary artery disease or cardiomyopathy)	Y	Y	—	—
≥3 known major cardiac risk factors ^{§§}	Y	—	—	—

Post-exposure (PEP) vaccination

For those with:

- A known or suspected exposure to someone with mpox
- A sex partner in the past 2 weeks who was diagnosed with mpox

For PEP, vaccination should be administered as soon as possible after exposure, ideally within 4 days.

Pre-exposure (PrEP) vaccination

- Gay, bisexual, and other MSM, and transgender and non-binary people who, in the past 6 months, have had
 - An STI diagnosis
 - More than one sex partner
- People who, in the past 6 months, have had
 - Sex at a commercial sex venue or large public event where mpox transmission was occurring
 - Sex in exchange for money or other items
- People whose sex partners have any of the above characteristics
- People who anticipate experiencing any of the above scenarios
- People with HIV infection who have had or anticipate mpox exposure
- People who work with orthopoxviruses in a laboratory

The vaccine is effective, and two doses are better than one.

TABLE 2. JYNNEOS vaccination history and estimated vaccine effectiveness among case-patients with mpox and control patients with sexually transmitted infections — New York,* July 24, 2022–October 31, 2022

Vaccination status	Mpox case-patients (n = 252)	All STI controls (n = 255)	
	No. (%)	No. (%)	VE (95% CI)
Unvaccinated	230 (91.3)	204 (80.0)	Ref
0–13 days after first dose	10 (4.0)	9 (3.5)	–36.2 (<–100 to 56.3)
≥14 days after first dose	10 (4.0)	23 (9.0)	68.1 (24.9 to 86.5)
≥0 days after second dose	2 (0.8)	19 (7.5)	88.5 (44.1 to 97.6)
≥14 days after first dose or ≥0 days after second dose	12 (4.8)	42 (16.5)	75.7 (48.5 to 88.5)

Abbreviations: Mpox = monkeypox; Ref = referent group; STI = sexually transmitted infection; VE = vaccine effectiveness.

* Outside of New York City.

Mpox tends to be milder among people who acquire it despite vaccination.

Compared to people who have never been vaccinated, those who have mpox despite full vaccination

- Have **lower** odds of hospitalization, death, systemic illness, fever, headache, malaise
- Have **fewer** skin lesions

Cornerstones of mpox treatment

- Pain management and supportive care
- Assessment and treatment of concurrent sexually transmitted infections and/or HIV, if indicated
- Antiviral medications for severe disease or for people at risk for severe disease?
 - Tecovirimat
 - Brincidofovir
 - Vaccinia immune globulin

Cornerstones of mpox treatment

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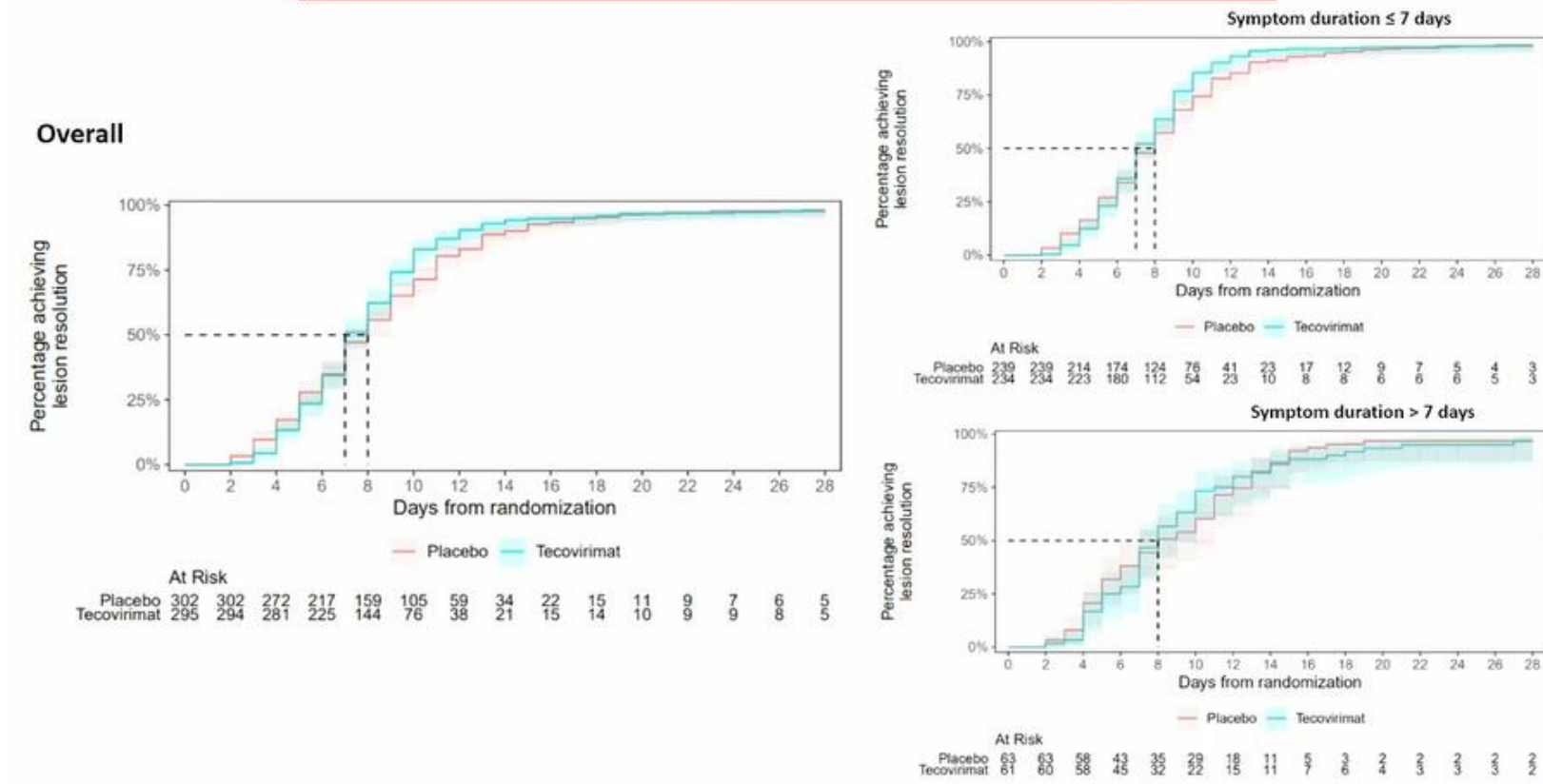
Tecovirimat (TPOXX™)

- Mechanism of action:
Blocking secondary viral envelope formation
- FDA approved (under the “Animal Rule”) for the treatment of smallpox in adults and children
- Not FDA approved for mpox
- Initially available during this outbreak through an expanded access protocol (ea-IND) or a clinical trial



Tecovirimat did not speed mpox resolution in the PALM007 trial.

Kaplan-Meier: cumulative incidence of lesion resolution



Tecovirimat was also ineffective in the STOMP trial.

www.nih.gov/news-events/news-releases/nih-study-finds-tecovirimat-was-safe-did-not-improve-mpox-resolution-or-pain

NEWS RELEASES

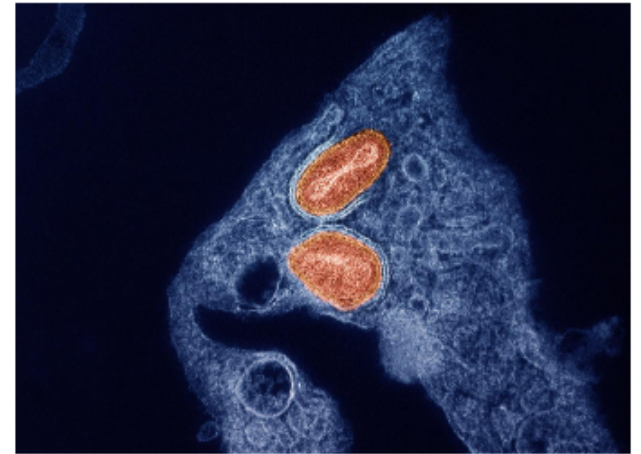
Tuesday, December 10, 2024

NIH Study Finds Tecovirimat Was Safe but Did Not Improve Mpox Resolution or Pain

Study Examined Tecovirimat in Countries Affected by Global Clade II Mpox Outbreak.

The antiviral drug tecovirimat did not reduce the time to lesion resolution or have an effect on pain among adults with mild to moderate clade II mpox and a low risk of developing severe disease, according to an interim data analysis from the international clinical trial called the Study of Tecovirimat for Mpox (STOMP). There were no safety concerns associated with tecovirimat.

Considering these definitive findings, the study's Data Safety and Monitoring Board (DSMB) recommended stopping further enrollment of participants who were being randomized to tecovirimat or placebo. As the study sponsor, the National Institutes of Health's (NIH) National Institute of Allergy and Infectious Diseases (NIAID) accepted the DSMB's recommendation. Given the lack of an efficacy signal, NIAID also closed enrollment into an open-label study arm for participants with or at elevated



Colorized transmission electron micrograph of two particles of the virus that causes mpox, cultivated and purified from cell culture. *NIAID*

Meningococcal disease

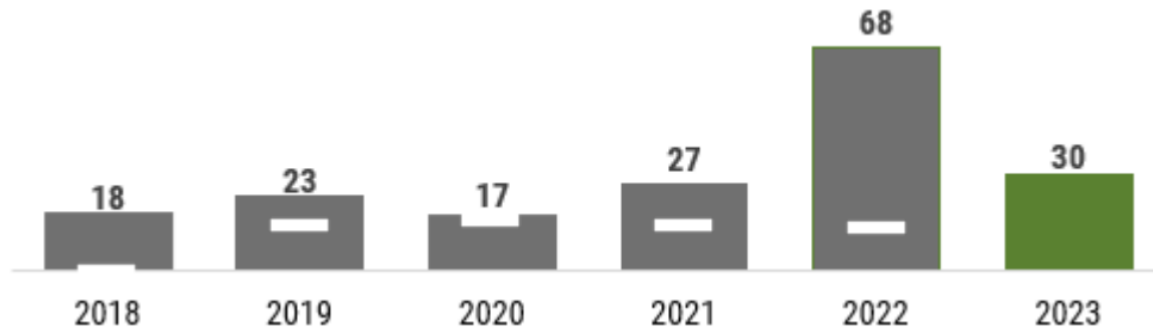
What is meningococcus?

- A potentially severe illness caused by the bacterium *Neisseria meningitidis*.
- Manifestations include meningitis and sepsis.
- Up to 15% of affected people will die of the infection; 20% of survivors will have long-term sequelae.



2022 outbreak in Florida

Meningococcal disease cases in Florida, by year



*The white bars indicate the total number of cases as of August for each year

- Outbreak involved serogroup C and predominantly affected gay, bisexual, and other MSM, some with HIV.
- About half of cases were among Hispanic/Latino men.
- Most affected individuals lived in Florida, but some had traveled to the state.

Vaccination was key to outbreak response.

- CDC encouraged MSM living in Florida to receive vaccination with the MenACWY vaccine.
- The vaccine was available free of charge at health department clinics.
- CDC also encouraged MSM to discuss vaccination with their clinicians if they intended to travel to Florida.
- **Reminder:** CDC recommends routine meningococcal vaccination for all people with HIV.



Summary

- Syphilis rates have increased; screen all people ages 15-44 for syphilis.
- The mpox outbreak continues; continue vaccinating those at higher likelihood for mpox.
- The optimal treatment for severe mpox is unknown.



THANK YOU!

The National LGBTQIA+ Health Education Center provides educational programs, resources, and consultation to health care organizations with the goal of optimizing quality, cost-effective health care for lesbian, gay, bisexual, transgender, queer, intersex, asexual, and all sexual and gender minority (LGBTQIA+) people.

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