

**Mpox Now: Update on Prevention, Diagnosis & Treatment for People With or At-risk for HIV**

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This activity is jointly provided by Physicians' Research Network and the Medical Society of the State of New York.

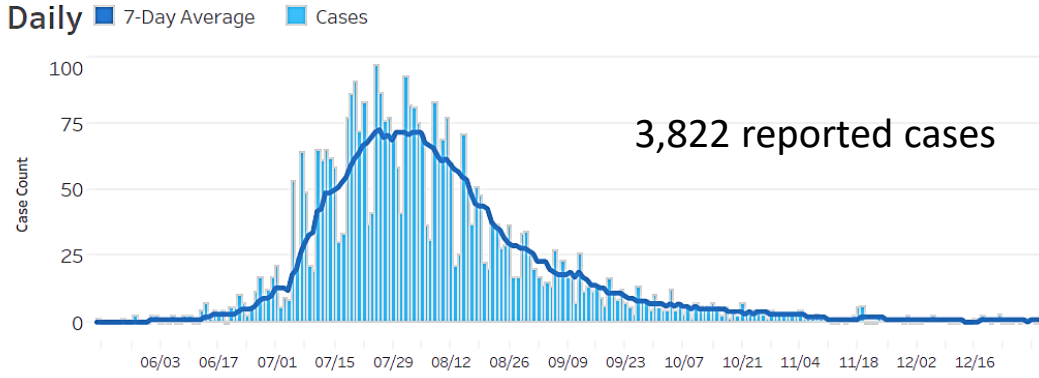
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# Situational Update



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# Mpox outbreak (Clade II MPXV) NYC, 2022



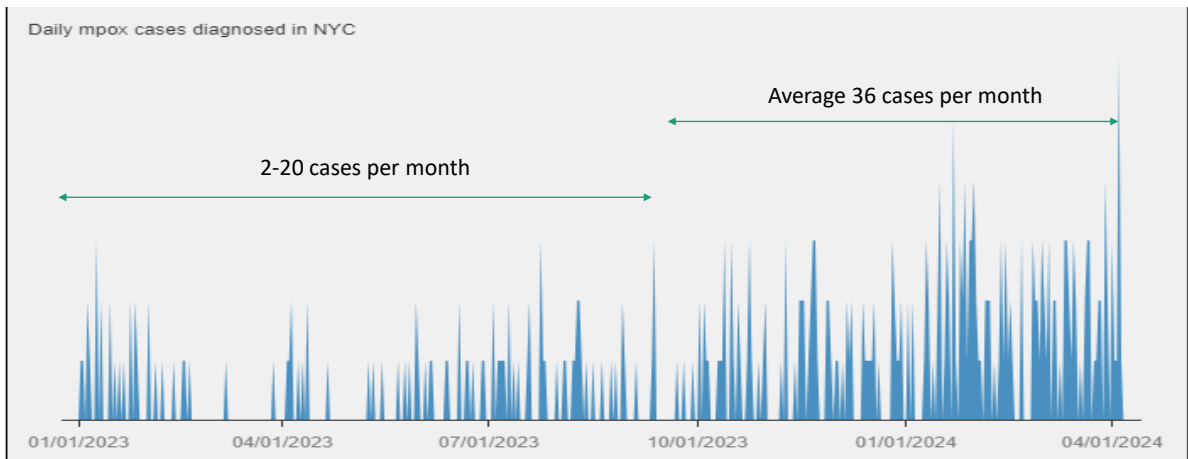
Sources: NYC DOHMH, 15 January 2023, <https://www.nyc.gov/assets/doh/downloads/pdf/monkeypox/mpox-response-data-summary.pdf>; 2 May 2023, internal data.



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# Ongoing cases (Clade II MPXV)

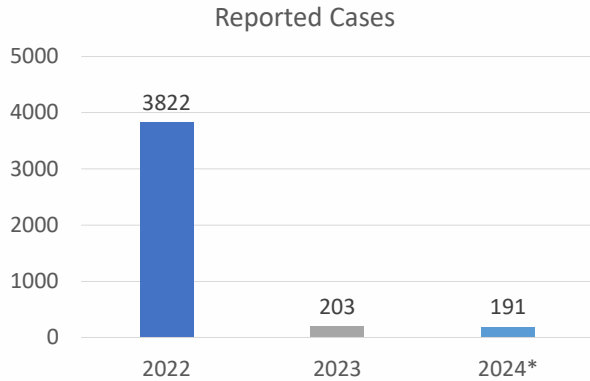
NYC, January 2023 – April 11, 2024



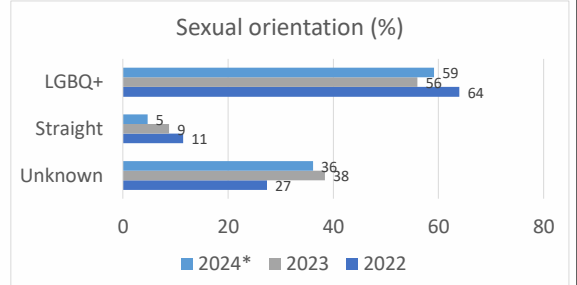
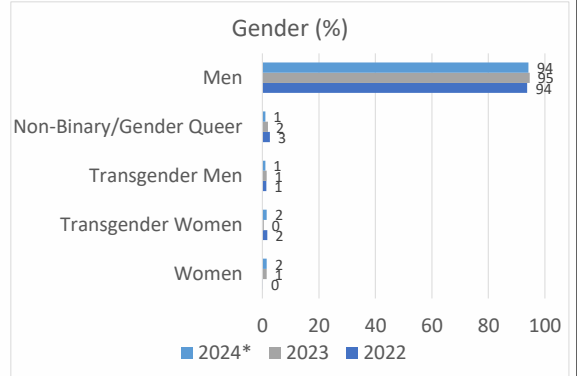
191 reported cases in NYC, January 1-May 4, 2024

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# Epidemiology of cases

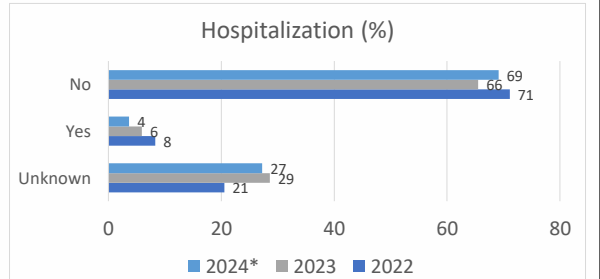
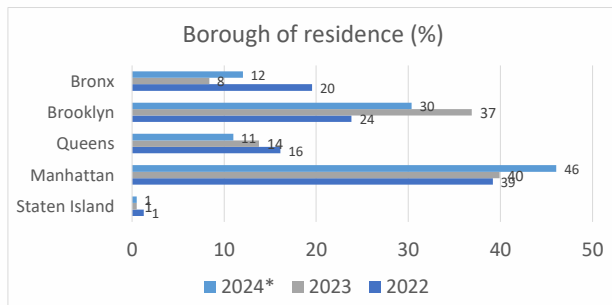
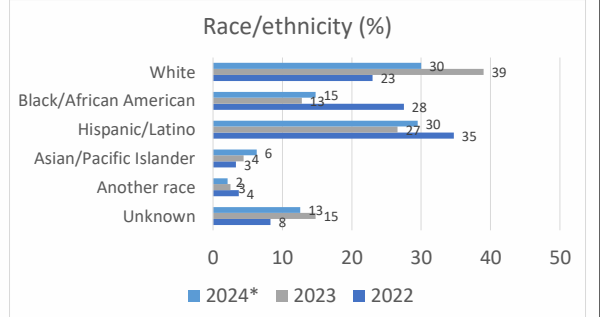
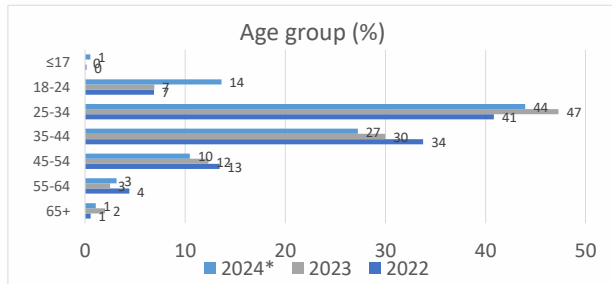


\*Data through April 2024



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# Epidemiology of cases



Death (reported by a provider or MPXV listed as cause of death on the death certificate): 2022 (6), 2023 (1), 2024 (0)

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## Risk of a resurgent mpox outbreak

- Will grow over time as new, never-vaccinated or never-infected people become sexually active, reducing overall population immunity
- Could increase due to waning immunity
- **Is ongoing, with increased transmission and introduction from other areas or countries**

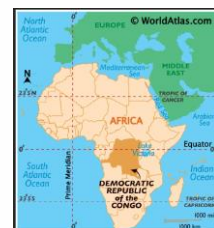
[Risk Assessment of Mpox Resurgence and Vaccination Considerations | CDC Archive](#)



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## Current outbreak in the Democratic Republic of the Congo

- Mpox endemic in DRC
  - Clade 1 MPXV
  - Zoonotic transmission
- Now largest surge of mpox cases ever recorded
  - Since January 1, 2023, >19,000 suspect mpox cases and >900 deaths
  - Widespread: reported in 23 of 26 provinces, concentrated largely in two provinces
  - Few cases have been confirmed by laboratory testing
  - Some infections have been tied to sexual contact, which marks the first reported instances of such transmission with this type of mpox
  - Higher severity, higher CFR



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## Risk to the U.S.

[USNews](#) · 4d

### Spread of Deadlier Mpox Strain in Africa Has CDC Concerned

THURSDAY, May 16, 2024 (HealthDay News) – The central African nation of the Democratic Republic of Congo (DRC) is battling a ...



Time

Health Experts are Watching a More Dangerous Version of Mpox



- No cases of clade 1 mpox reported in the U.S.
- Very low risk of mpox circulating in the DRC to the general public
- Low to moderate risk for MSM with >1 partner and people who have sex with MSM
- CDC assessment based on:
  - information about how mpox spreads
  - where it is spreading currently
  - travel patterns from DRC and neighboring countries to the U.S. and globally
- The risk might change as more information becomes available, or if cases appear outside DRC or other African countries where clade I exists naturally

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## Local updates



### 2024 Health Advisory #12: Updates on Mpox in New York City

- Mpox continues to circulate in New York City (NYC), with a substantial increase in reported cases since October 2023.
- An outbreak of the more severe Clade I monkeypox virus (MPXV) in the Democratic Republic of the Congo poses risk for the introduction of Clade I into the U.S.
- Consult with the NYC Department of Health and Mental Hygiene about testing if a patient is suspected of having Clade I MPXV. Treatment and vaccination strategies for Clade I are similar to those for Clade II.
- Individuals with potential risk of exposure to mpox should be fully vaccinated. Continue to encourage and offer vaccination or refer to vaccination sites.
- Commercialization of the JYNNEOS vaccine is underway. Begin to identify processes and funds to purchase vaccine on the commercial market.

May 3, 2024

- Update on rise in case numbers
- Alert to DRC outbreak
- Vaccination update
- Recommendations for:
  - ✓ Testing
  - ✓ Vaccination
  - ✓ Patient care
- Treatment and vaccination strategies for Clade I similar to those for Clade II

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# Clinical Presentation, Testing, and Diagnosis



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## Clinical Presentation in and since 2022

Cases during outbreak had atypical features

- Characteristic rash, but often starts in *genital* and *perianal* areas or *orally*
- Depending on when the patient presented, progression of lesions might not have appeared characteristic, especially if lesions were in the early stages
- Sometimes didn't disseminate to other parts of body and lesions might have been in different stages
- Location was likely reflective of points of contact
- Prodromal symptoms mild, not present, not detected or appeared after rash
  - Fever, headache, myalgia, lymphadenopathy, night sweats, chills

Most cases since the 2022 outbreak experience mild signs and symptoms



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## Clinical Presentation in and since 2022

Severe presentations could be debilitating with potential for long-term sequelae

- Proctitis (with or without ulcers) – tenesmus, bleeding, severe pain
- Urethritis (urethral ulcers) – dysuria, hematuria
- Oropharyngitis (pharyngeal ulcers) – tonsillitis, dysphagia, odynophagia
- Balanitis/balanoposthitis – phimosis, paraphimosis
- Perichondritis
- Bacterial superinfection – scarring, strictures, disfigurement
  - Penile/testicular, pharyngeal, testicular lesions

STI co-infections are common

- Gonorrhea, chlamydia, syphilis, herpes, acute HIV

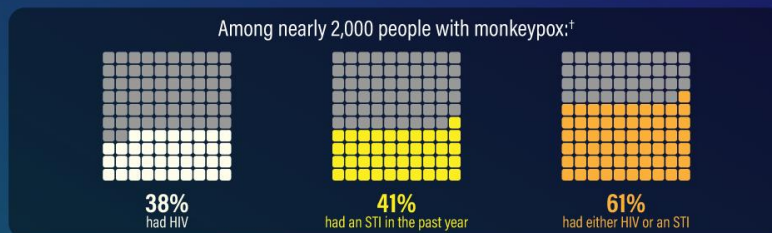


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### HIV and Sexually Transmitted Infections Among Persons with Monkeypox — Eight U.S. Jurisdictions, May 17–July 22, 2022

In the U.S., HIV or recent sexually transmitted infections (STIs)\* are common among people with monkeypox

Among nearly 2,000 people with monkeypox:†



It is important to

Prioritize people with HIV and STIs for monkeypox vaccination

Offer HIV and STI screening for people evaluated for monkeypox



\*Diagnosed with an STI other than HIV in the past year

† People diagnosed with monkeypox in eight jurisdictions during May 17–July 22, 2022

[bit.ly/mm7136a1](https://bit.ly/mm7136a1)

SEPTEMBER 9, 2022



Curran KG, et al. HIV and Sexually Transmitted Infections Among Persons with Monkeypox — Eight U.S. Jurisdictions, May 17–July 22, 2022. MMWR Morb Mortal Wkly Rep 2022;71:1141–1147. DOI: <http://dx.doi.org/10.15585/mmwr.mm7136a1>

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# Evolution of Cutaneous Lesions



Thornhill 2022, N Engl J Med ; <https://www.nejm.org/doi/full/10.1056/NEJMoa2207323>



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# Penile Lesions



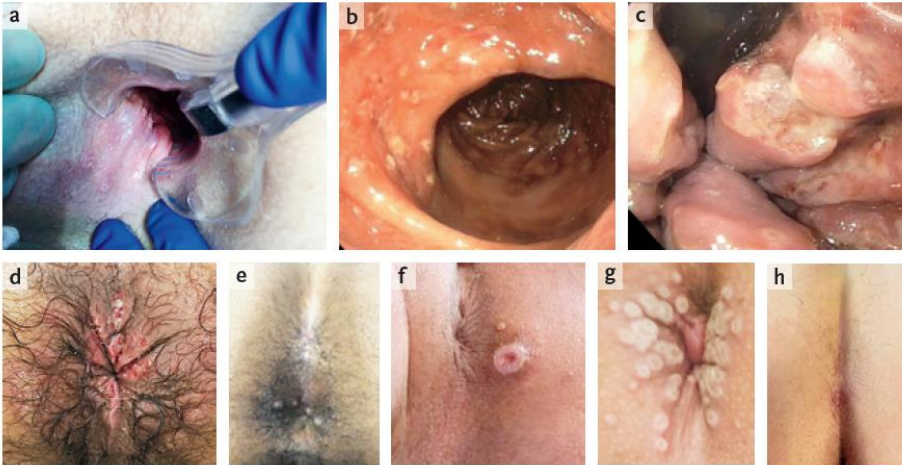
Thornhill 2022, N Engl J Med ; <https://www.nejm.org/doi/full/10.1056/NEJMoa2207323>



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# Perianal, Anal and Rectal Lesions



Thornhill 2022, N Engl J Med : <https://www.nejm.org/doi/full/10.1056/NEJMoa2207323>



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# Oral and Perioral Lesions



Thornhill 2022, N Engl J Med : <https://www.nejm.org/doi/full/10.1056/NEJMoa2207323>



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## Differential Diagnosis

- Mpox
  - Deep, painful, umbilicated, but can progress through stages
  - May not be localized
- Primary syphilis
  - Painless and more shallow
  - Not umbilicated
  - Localized
- Varicella Zoster Virus
  - Both painful and can be vesicular, dermatomal
- Herpes Simplex Virus
  - Shallow, localized
- Molluscum
  - Both umbilicated, localized, not painful

[GOALS Framework for Sexual History Taking in Primary Care](#)



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## Testing

- Submit mpox specimens to a commercial or facility-based laboratory that has been approved to conduct mpox testing by New York State.
- If testing is not feasible, call the NYC Health Department's Provider Access Line at **866-692-3641** to arrange for testing, following the NYC Public Health Laboratory [specimen collection guidelines](#).

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## Testing

- Be alert to the possibility of Clade I MPXV and need for specimen collection for people with symptoms and a history of travel or epidemiological links to a region of endemicity, including the Democratic Republic of the Congo, within 21 days of symptom onset.
- If Clade I MPXV is suspected, call the Provider Access Line at 866-692-3641 for immediate consultation and to arrange for testing by the CDC (currently, only CDC can test for Clade I).

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## Management and Treatment

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## Supportive Care

- Most individuals have a disease course that will self-resolve and can be managed with supportive care (e.g., over-the-counter medication, cooling lotions and jelly, sitz baths)\*
- Some lesions can be extremely painful and can evolve quickly
  - Recommend NSAIDS, acetaminophen for systemic pain control
  - Some patients may need opioids and/or hospitalization for pain control
- All patients should be evaluated and treated for potential co-infections
  - Secondary bacterial infections are common
- Complications can include strictures (anogenital), pneumonitis, encephalitis, sight-threatening keratitis

\*<https://www.nyc.gov/site/doh/health/health-topics/mpox-when-sick.page>



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## Treatment

### Skin lesions

- Keep clean and dry when not showering or bathing to prevent bacterial superinfection
- Pruritus managed with oral antihistamines and inert, anti-irritant topical agents such as calamine lotion or petroleum jelly

### Oral lesions

- Compounds such “magic” or “miracle” mouthwashes (prescription solutions used to treat mucositis) to manage pain
- Oral antiseptics to keep lesions clean (e.g., chlorhexidine mouthwash)
- Topical benzocaine/lidocaine gels for temporary relief, especially to facilitate eating and drinking, but limit to recommended doses

Clinical Considerations for Pain Management of Mpox: <https://www.cdc.gov/poxvirus/mpox/clinicians/pain-management.html>



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## Treatment

### Ocular complications

- Trifluridine, a topical antiviral, can be used in addition to tecovirimat
- Stop using contact lenses, avoid touching the eyes

### Nausea and vomiting

- Anti-emetics as appropriate

### Diarrhea

- Managed with appropriate hydration and electrolyte replacement
- Anti-motility agents not generally recommended given the potential for ileus

Clinical Considerations for Pain Management of Mpox: <https://www.cdc.gov/poxvirus/mpox/clinicians/pain-management.html>  
 Interim Clinical Considerations for Management of Ocular Mpox Virus Infection: <https://www.cdc.gov/poxvirus/mpox/clinicians/ocular-infection.html>



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## Treatment

- Proctitis can occur with or without internal or external lesions
  - May be manageable with appropriate supportive care
  - Can progress to become severe and debilitating
    - Stool softeners such as docusate should be initiated early
    - Sitz baths may calm inflammation
    - Over the counter pain medications such as acetaminophen or NSAIDs
- Pain from proctitis may require prescription medications
  - Balance use with the possibility of side effects, like constipation
- Proctitis may be accompanied by rectal bleeding
  - Observed to be self-limited but should be evaluated by a healthcare provider

Clinical Considerations for Pain Management of Mpox: <https://www.cdc.gov/poxvirus/mpox/clinicians/pain-management.html>



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## Antiviral Treatment

Tecovirimat (TPOXX) is an antiviral medication approved by the FDA to treat smallpox disease

- Oral capsule and IV formulations
- Can be given on outpatient basis
- Must be taken with a fatty meal



Can be accessed through the *Study of Tecovirimat for Mpox (STOMP) clinical trial* (mild to moderate illness), or the *Expanded Access-Investigational New Drug (EA-IND) protocol* if the someone has severe illness or does not want to participate in STOMP

[https://emergency.cdc.gov/coca/ppt/2022/052422\\_slides.pdf](https://emergency.cdc.gov/coca/ppt/2022/052422_slides.pdf)  
[https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2018/208627s000lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2018/208627s000lbl.pdf)



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## Obtaining tecovirimat

Inform patients about the STOMP trial

- <https://www.stomptpoxx.org/main>; (855) 876-9997
- Participation is voluntary
- Remote enrollment option

Tecovirimat can also be accessed through CDC Expanded Access Investigational New Drug Process

Local delivery of TPOXX possible through Pharmex Pharmacy



<https://www.nyc.gov/site/doh/providers/health-topics/mpox.page>



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## Tecovirimat for Treatment – When to Treat

- Patients with severe disease - hemorrhagic disease; large number of lesions such that they are confluent; sepsis; encephalitis; ocular or periorbital infections; other conditions requiring hospitalization
- Patients with involvement of anatomic areas which might result in serious sequelae that include scarring or strictures
- Patients at high risk for severe disease
  - Severe immunocompromising conditions
    - advanced or poorly controlled HIV
  - Pediatric patients
  - Pregnant or chest/breastfeeding patients
  - Patients with a condition affecting skin integrity



Guidance for Tecovirimat Use: <https://www.cdc.gov/poxvirus/mpox/clinicians/Tecovirimat.html>  
 Clinical Considerations for Treatment and Prophylaxis of Mpox Infection in People Who are Immunocompromised:  
<https://www.cdc.gov/poxvirus/mpox/clinicians/people-with-HIV.html>



<https://www.nyc.gov/site/doh/providers/health-topics/mpox.page>

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## Severe Manifestations of Mpox Disease



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## Severe Manifestations of Monkeypox among People who are Immunocompromised Due to HIV or Other Conditions



Distributed via the CDC Health Alert Network  
September 29, 2022 02:15 PM ET  
CDCHAN-00475

### Morbidity and Mortality Weekly Report (MMWR)

< Morbidity and Mortality Weekly Report (MMWR) Home

## Interim Clinical Treatment Considerations for Severe Manifestations of Mpox — United States, February 2023

*Weekly* / March 3, 2023 / 72(9);232–243

<https://emergency.cdc.gov/han/2022/han00475.asp>  
<https://www.cdc.gov/mmwr/volumes/72/wr/mm7209a4.htm>



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## Severe Disease – NYC Experience

~12 mpox cases among people with HIV requiring prolonged tecovirimat, referred from CDC clinical consult line and NYC Provider Access Line

- Mostly non-Hispanic Black young men
- Many in unstable housing in the previous year

### Clinical Features

- High viral loads
- CD4<200, most with CD4<50
- All hospitalized, some for months
- ~50% died

[Garcia EA, et al. Conference on Retroviruses and Opportunistic Infections 2023, Poster 735](#)



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## Severe Disease – Management

If mpox suspected, immediately start tecovirimat if CD4<200, new HIV diagnosis, or people living with HIV with unknown immune status.

- Do not wait for labs to return
- Closely follow up to monitor for progression if outpatient

Immediately start antiretrovirals

- Mpox will not resolve until patient has had immune reconstitution

Interim Clinical Treatment Considerations for Severe Manifestations of Mpox  
<https://www.cdc.gov/mmwr/volumes/72/wr/mm7209a4.htm>



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## Severe Disease – Management

Extend tecovirimat until lesions have healed and patient has had immune reconstitution

- Tecovirimat inhibits viral replication and is virostatic, not virucidal
- Have a low threshold to switch to IV tecovirimat if any concern for absorption or ability to consume fatty meals
- Clearance of mpox requires having an immune system; this may take months

Interim Clinical Treatment Considerations for Severe Manifestations of Mpox  
<https://www.cdc.gov/mmwr/volumes/72/wr/mm7209a4.htm>



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## Severe Disease – Management

For hospitalized patients consider combination therapy:

- IV tecovirimat + one or more of the following
- Vaccinia immune globulin intravenous
- Brincidofovir
- Cidofovir
- Trifluridine (if eye involvement)

For consultation

- Contact the CDC Clinical Escalations Team at 770-488-7100  
([poxxvirus@cdc.gov](mailto:poxxvirus@cdc.gov))
- NYC Provider Access Line: 866-692-3641

Interim Clinical Treatment Considerations for Severe Manifestations of Mpox  
<https://www.cdc.gov/mmwr/volumes/72/wr/mm7209a4.htm>



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## Examples of Severe Manifestations



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# Necrotic Facial Lesions

## "Burn-like" lesions

- Obliteration of recognizable facial features



Photo courtesy of Ann Ostrovsky, MD and Steven Carrubba, MD, NYU Langone Medical Center (published)



Photo courtesy of Anusha Govind, MD, University of Texas Southwestern Medical Center (published)

[Carrubba S, et al. Lancet Infect Dis. 2023](#) ; [Govind A, et al. CID 2023](#)



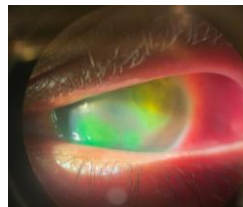
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## Ophthalmologic Complications

- Eyelid eschar
- Orbital Globe Collapse
- Corneal Melt



Confluent/restrictive eyelid eschar, CT scan orbital globe collapse (published)



Progressive keratouveitis with corneal melt (Unpublished)

Photos courtesy of Ann Ostrovsky, MD and Steven Carrubba, MD; NYU Langone Medical Center, NYCHHC-Bellevue; [Carrubba S, et al. Lancet Infect Dis. 2023](#)



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## Gastrointestinal Complications

- Uncontrollable large volume gastrointestinal bleeding and hemorrhagic shock due to severe mpox
  - Esophageal: Necrotic, hemorrhagic, friable masses that were raised and ulcerated
  - Rectal: Deep ulcers with extensive necrosis
  - Viral cytopathic changes on histology
- Ileus
- Obstruction

[Govind A, et al. CID 2023](#)



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## Summary

Take a sexual history and test for all other STIs and HIV

Treat symptoms and consider tecovirimat

Refer patient to the STOMP Trial

Severe manifestations have been seen, primarily among people who are immunocompromised due to poorly controlled HIV

- Start treatment immediately, prolonged treatment may be needed
- Initiate antiretrovirals
- Call CDC Clinical Consult Line



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# Mpox Prevention



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## Mpox risk associated with higher rates of partner change

Centers for Disease Control and Prevention



Morbidity and Mortality Weekly Report

Early Release / Vol. 71

August 26, 2022

### Modeling the Impact of Sexual Networks in the Transmission of Monkeypox virus Among Gay, Bisexual, and Other Men Who Have Sex With Men — United States, 2022

Ian H. Spicknall, PhD<sup>1</sup>; Emily D. Pallock, PhD<sup>1</sup>; Patrick A. Clay, PhD<sup>1</sup>; Alexandra M. Oster, MD<sup>1</sup>; Kelly Charniga, PhD<sup>1</sup>; Nina Masters, PhD<sup>1</sup>; Yoshinori J. Nakazawa, PhD<sup>1</sup>; Gabriel Raimich, PhD<sup>1</sup>; Adi V. Gundlapalli, MD<sup>1</sup>; Thomas L. Giff, PhD<sup>1</sup>

#### Modeled mean number of partners, population size, and risk ratio for acquiring monkeypox among gay, bisexual, and other men who have sex with men, by level of sexual activity

Sexual activity stratum <sup>†</sup>	Mean no. and types <sup>§</sup> of partners during time interval			% of population	RR (by transmission scenario)	
	Past yr		Past 3 wks		Lower	Higher
	All types	All types	One-time only			
1 (lowest)	1.8	0.8	0.0	19	0.6	0.5
2	1.8	0.8	0.0	19	0.7	0.5
3	4.0	0.9	0.1	19	0.9	0.9
4	4.0	1.0	0.2	19	1.0*	1.0*
5	14.7	1.5	0.7	19	1.8	2.3
6 (highest)	124.7	6.6	5.8	5	3.6	6.9

**Abbreviation:** RR = risk ratio.

\* Contact data sources: <https://doi.org/10.1016/j.jepidem.2020.100386>; <https://doi.org/10.1093/infdis/jiw223>; <https://doi.org/10.1093/infdis/jiw223>

<sup>†</sup> Based on rate of one-time partnership formation. MSM in stratum 1 have a 0.000 probability of having a one-time sexual partner on any given day, and MSM in stratum 6 have a 0.286 probability of having a one-time sexual partner on any given day. Strata 2–5 have one-time partnership probabilities between these two endpoints on any given day.

<sup>§</sup> Partnerships include main (assumed to last an average of 477 days), casual (assumed to last an average of 166 days), and one-time (assumed to last 1 day).

<sup>¶</sup> Comparison group for RR calculation.

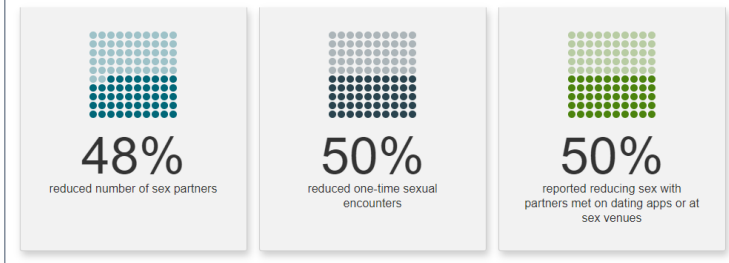
[https://www.cdc.gov/mmwr/volumes/71/wr/mm7135e2.htm?s\\_cid=mm7135e2\\_w](https://www.cdc.gov/mmwr/volumes/71/wr/mm7135e2.htm?s_cid=mm7135e2_w)

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## Strategies Adopted to Prevent Monkeypox

- The American Men's Internet Survey (AMIS) is an annual online survey of cisgender gay, bisexual, same gender loving, and other men who have sex with men in the United States.
- In August 2022, Emory University conducted a special one-time survey with AMIS participants to explore knowledge, attitudes and practices related to the US mpox outbreak.

Gay, bisexual, and other men who have sex with men are taking steps to protect themselves and their partners from monkeypox.



Source: American Men's Internet Survey, 2022 Monkeypox Supplemental Survey. <https://emoryamis.org/>  
Morb Mortal Wkly Rep. August 2022.

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## Prevention messages

- Get vaccinated against mpox
- During sex or other intimate contact, the following can help reduce risk:
  - Reduced number of partners, especially those that are anonymous or whose recent sexual history is unknown
  - If partners have mpox symptoms or feel sick, do not have sex or close physical contact
  - Avoid sex parties, circuit parties and other spaces where people are having sex and other intimate contact with multiple people
  - If someone does have sex or other intimate contact while sick, they should cover all rashes and sores with clothing or sealed bandages
    - This might reduce spread from contact with the rash or sores, but other methods of transmission might still be possible
  - Since the virus may be transmitted through semen, use latex condoms during sex
  - Do not share towels, clothing, fetish gear, sex toys or toothbrushes
  - Wash sex toys after each use or sex act

<https://www1.nyc.gov/site/doh/health/health-topics/mpox.page>



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# NYC Mpox Vaccine Updates



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## Vaccine effectiveness

Morbidity and Mortality Weekly Report

**Estimated Effectiveness of JYNNEOS Vaccine in Preventing Mpox:  
A Multijurisdictional Case-Control Study — United States,  
August 19, 2022–March 31, 2023**

TABLE 2. Estimated JYNNEOS vaccine effectiveness against mpox — United States, August 2022–March 2023

Characteristic	Case-patients*	Control patients*	VE (95% CI)	
			Unadjusted	Adjusted†
Overall, full vaccination <sup>§</sup>	28	178	87.4 (78.6 to 92.6)	85.9 (73.8 to 92.4)
Overall, partial vaccination <sup>¶</sup>	58	237	75.7 (64.5 to 83.3)	75.2 (61.2 to 84.2)
<b>By administration route</b>				
<b>Full vaccination</b>				
Subcutaneous	7	27	88.7 (60.9 to 96.7)	88.9 (56.0 to 97.2)
Intradermal	5	25	80.7 (37.6 to 94.0)	80.3 (22.9 to 95.0)
Heterologous	16	125	88.3 (75.7 to 94.4)	86.9 (69.1 to 94.5)
<b>Partial vaccination</b>				
Subcutaneous	38	159	75.6 (61.2 to 84.6)	77.0 (59.7 to 86.8)
Intradermal	18	76	77.4 (57.4 to 88.1)	80.6 (56.1 to 91.4)
<b>By immunocompromise status**</b>				
<b>Full vaccination</b>				
Immunocompromised	9	31	72.9 (–11.8 to 93.4)	70.2 (–37.9 to 93.6)
Immunocompetent	14	126	86.2 (64.8 to 94.6)	87.8 (57.5 to 96.5)
<b>Partial vaccination</b>				
Immunocompromised	22	52	55.5 (4.3 to 79.3)	51.0 (–27.6 to 81.2)
Immunocompetent	27	162	68.9 (38.2 to 84.4)	72.1 (36.2 to 87.8)

Adjusted VE was 75% for 1 dose and 86% for 2 doses of JYNNEOS vaccine, indicating substantial protection against mpox, irrespective of route of administration or immunocompromise status

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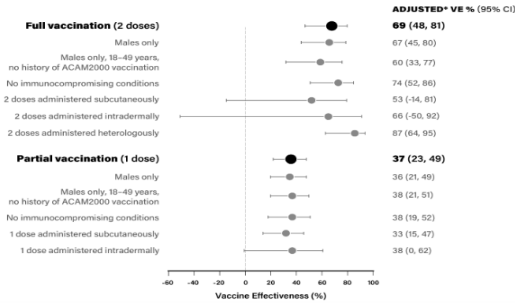
# Vaccine effectiveness

## Preliminary JYNNEOS Vaccine Effectiveness Estimates Against Medically Attended Mpox Disease in the U.S., August 15, 2022 – October 29, 2022

Updated December 8, 2022 [Print](#)

JYNNEOS vaccine is effective at reducing the risk of mpox disease, with two doses providing the best protection, regardless of how the vaccine was administered.

### Preliminary vaccine effectiveness (VE) estimates against medically attended mpox disease



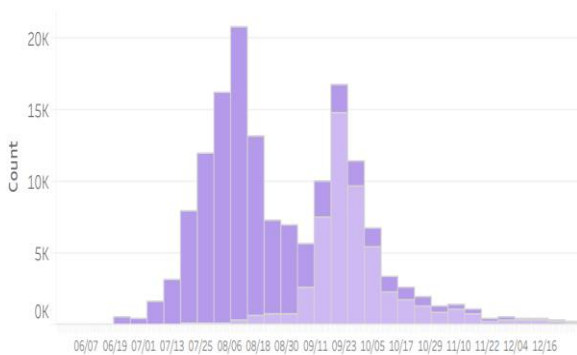
Source: Preliminary JYNNEOS Vaccine Effectiveness Estimates Against Medically Attended Mpox Disease in the U.S., August 15, 2022 – October 29, 2022 | [Mpox](#) | [Poxvirus](#) | [CDC](#)

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# Vaccination in NYC, 2022

Weekly

Dose 1 Dose 2



Total Cumulative

154,557

Dose 1 Cumulative

102,183

Dose 2 Cumulative

52,374

With the invaluable support of providers like you, NYC had administered >154,000 mpox vaccinations in 2022; ~2/3 were first doses

Dose 1 counts and proportions of those with a completed 2-dose series

Dose 1 (N)  
Completed 2-dose series (%)

<https://www.nyc.gov/assets/doh/downloads/pdf/monkeypox/mpox-response-data-summary.pdf>

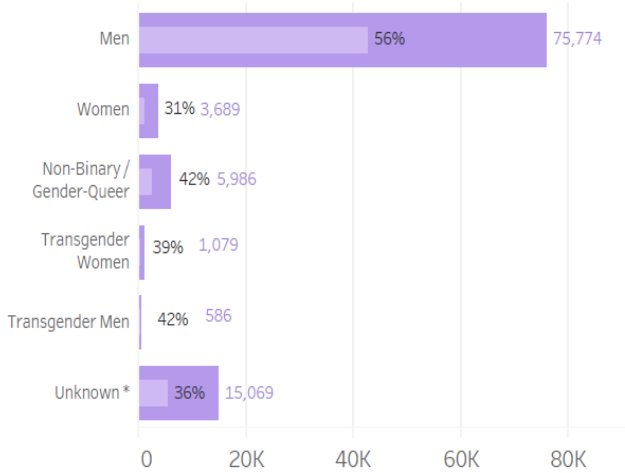


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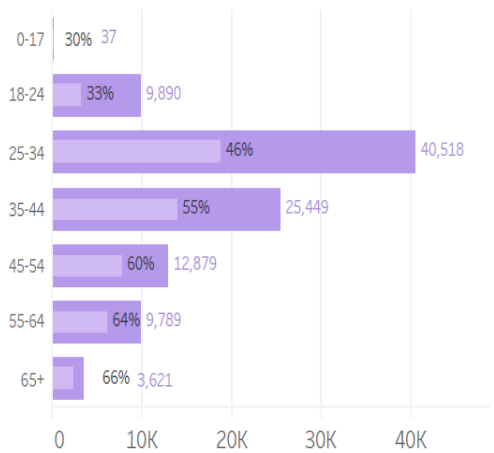


# Inequities in Second Dose Vaccination Coverage, 2022

## Gender



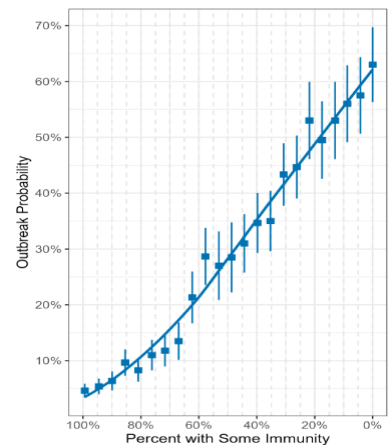
## Age



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# Vaccine coverage and outbreak probability

- During 2022 outbreak, only 23% of the U.S. population at risk\* had been fully vaccinated.
- Vaccine coverage varied widely between jurisdictions and was relatively high for NYC: 89% (one dose) and 45% (two doses).
- While a modeling study predicted a relatively low outbreak probability for NYC, it remains important to increase vaccination levels, particularly for two-dose completion.



\*Denominator is the population recommended to receive the vaccine, estimated using 2021 data for MSM with HIV PrEP indications and 2020 data on MSM living with HIV. These estimates are increased by 25% to account for additional vaccine eligible people not captured by these data sources

[JYNNEOS Vaccine Coverage by Jurisdiction](#) | [Mpox](#) | [Poxvirus](#) | [CDC](#)



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# Recommendations and authorizations for use of JYNNEOS vaccine

- ACIP recommends the 2-dose JYNNEOS vaccine
  - Dose 2 administered one month after Dose 1
- Vaccination of individuals younger than age 18 authorized under FDA emergency use authorization
- Providers should administer mpox vaccine as part of routine sexual health services
- Administration of additional vaccine doses (more than 2 doses) is currently not recommended for most people
  - For people at risk for occupational exposure to orthopoxviruses (e.g., certain research laboratorians), booster doses are recommended at 2-10 years depending on the type of work being performed.

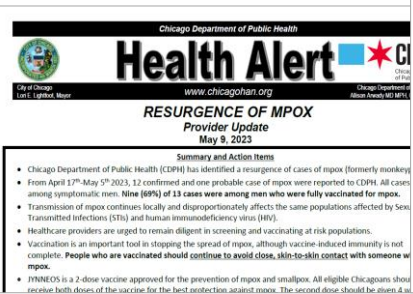


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# Immunity with JYNNEOS vaccine

- Peak immunity is expected to be reached 14 days after the second dose of JYNNEOS vaccine.
- Most patients who have been vaccinated are expected to have cross-protection to Clade I MPXV.
- Waning immunity

Of 256 NYC cases (October 2023-April 15, 2024), 73% were not vaccinated or had received only one dose



NEWS RELEASE 30-MAR-2024

## Study shows Mpox (monkeypox) antibodies wane within a year of vaccination

However antibodies remain high in those with pre-existing immunity

Reports and Proceedings  
EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

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## Strongly recommend vaccination for people at higher risk for mpox exposure

- People who have sex with men and identify as male, trans, nonbinary/ genderqueer or gender non-conforming
- Anyone who would be at risk for mpox through sex or other intimate contact now or in the future
  - Multiple sex partners, anonymous sex partners, group sex, events where there is minimal clothing and direct, frequent, or prolonged skin-to-skin contact
  - Sex workers, erotic workers and anyone engaging in survival sex or any other types of transactional sex
- Anyone with close contact with someone who may have mpox: vaccine as soon as possible and no later than 14 days after the exposure

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## Recommend and provide post-exposure prophylaxis

- Post-exposure prophylaxis (PEP) with JYNNEOS vaccine should be initiated as soon as possible after exposure, ideally within 4 days
  - PEP administered between days 4 and 14 after exposure has been shown to be effective and should be offered
  - If a person is at on-going risk for mpox, recommend vaccination even if more than 14 days since last exposure
- Encourage individuals with mpox to disclose names of close contacts to the Health Department so that their contacts can be referred for PEP
  - If a person is comfortable doing so, the individual with mpox could notify their close contacts - guiding them to seek evaluation

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## Discuss JYNNEOS vaccination with patients

- Assess patients for JYNNEOS vaccination as a part of broader discussions around sexual health
- Provide a strong recommendation for vaccination to individuals at risk for mpox exposure
- Administer vaccine or refer for vaccination
- Document doses administered in the Citywide Immunization Registry



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## Strongly recommend completion of the 2-dose series

- Recommend and encourage individuals complete the 2-dose series
- Dose 2 should be given at least 28 days after Dose 1
- Administer Dose 2 no matter how much time has elapsed since Dose 1
  - Do not restart the series



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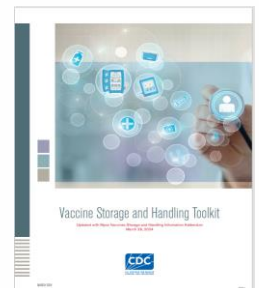
## Order and administer JYNNEOS vaccine

- April 1, 2024: the JYNNEOS vaccine began transition to the commercial market, though no-cost federal supplies are available until early summer 2024.
  - JYNNEOS vaccine will be made available through the [Vaccines for Children \(VFC\) Program](#) (for eligible adolescents) and the Vaccines for Adults (VFA) Program, likely within a few months of commercialization.
- Start to identify processes and funds for ordering JYNNEOS on the commercial market.
- Order no-cost vaccine by emailing [poxvax@health.nyc.gov](mailto:poxvax@health.nyc.gov). The NYC Health Department anticipates being able to fulfill requests until early summer 2024.
- If you do not offer vaccination, refer to [vaccinefinder.nyc.gov](http://vaccinefinder.nyc.gov) to find a vaccination site.

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## Order and administer JYNNEOS vaccine

- Vaccine is delivered frozen and can be stored in a regular freezer until expiration (often more than one year)
  - Vaccine can be stored at refrigerated temperatures up to 8 weeks
- The Vaccine Storage and Handling Toolkit is a comprehensive guide that reflects best practices for vaccine storage and handling from ACIP recommendations, product information from vaccine manufacturers, and scientific studies
  - Updated on 3/29/2024 to clarify language including mpox vaccine information
- Subcutaneous administration is recommended for all patients



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## Report JYNNEOS doses administered to the Citywide Immunization Registry

- Individuals < 19 years old:
  - Doses administered must be reported to the Citywide Immunization Registry (CIR) as required by NYS Public Health Law and NYC Health Code
- Individuals 19 years and older:
  - Doses administered should be reported to the CIR with patient consent (oral or written)



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## Co-administration

### Co-administer with other recommended vaccines

- Hepatitis A, Hepatitis B, Human papillomavirus, Meningococcal

### COVID-19 vaccines

- People who previously received COVID-19 vaccination may be given JYNNEOS without a minimum interval between vaccinations
- Those who previously received JYNNEOS, particularly adolescent or young adult males, might consider waiting 4 weeks before receiving a COVID-19 vaccine



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## Acknowledgements

*NYC Health Department colleagues*

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