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COVID ECHO

Outline

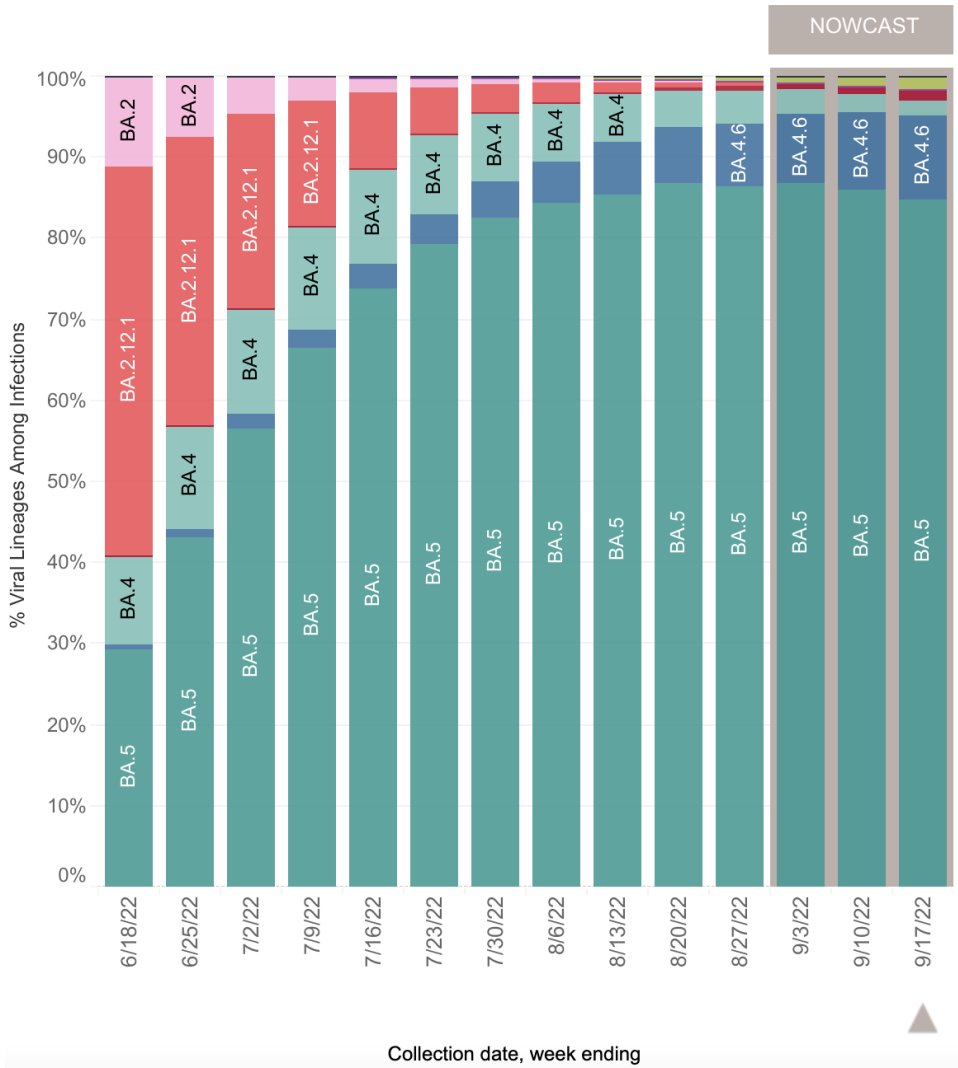
Covid-19

- Epidemiology
- Common questions
- Viral Rebound
- Viral Infectiousness
- Omicron Mortality
- Prevention
- Treatment

Monkeypox

- Are other STIs in patients with Monkeypox frequent?
- Vaccination

United States: 6/12/2022 – 9/17/2022



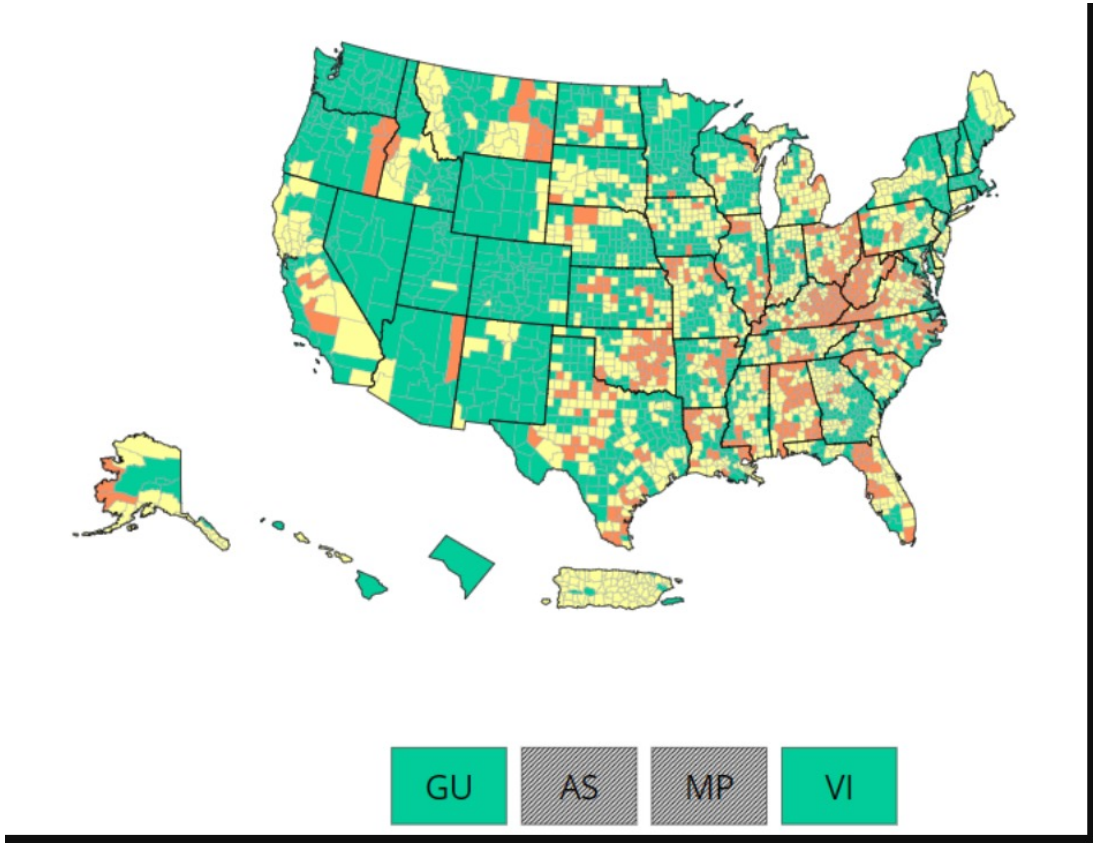
United States: 9/11/2022 – 9/17/2022 NOWCAST

USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.5	VOC	84.8%	83.2-86.3%
	BA.4.6	VOC	10.3%	9.1-11.7%
	BA.4	VOC	1.8%	1.6-1.9%
	BF.7	VOC	1.7%	1.2-2.4%
	BA.2.75	VOC	1.3%	0.8-2.2%
	BA.2.12.1	VOC	0.0%	0.0-0.0%
	BA.2	VOC	0.0%	0.0-0.0%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.1.1	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%

* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# AY.1-AY.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75 and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, sublineages of BA.5 are aggregated to BA.5. Sublineages of BA.1.1 and BA.2.75 are aggregated to the parental BA.1.1 and BA.2.75 respectively. Previously, BA.2.75 was aggregated with BA.2, and BF.7 was aggregated with BA.5.

COVID-19 Community Levels



- **As of September 15, 2022, there are:**
  - 439 **(13.6%)** counties, districts, or territories with a **high** COVID-19 Community Level
  - 1,154 **(35.8%)** counties with a **medium** Community Level
  - 1,627 **(50.5%)** counties with a **low** Community Level.
- **Compared with last week, this represents a moderate decrease in the number of:**
  - Moderate decrease in high-level counties (−3.9 percentage points)
  - Moderate decrease in medium-level counties (3.8 percentage points)
  - Large increase in the number of low-level counties (+7.4 percentage points)
- **Overall, 46 out of 52 jurisdictions* had high- or medium-level counties this week.**
  - The District of Columbia, Hawaii, Nevada, New Mexico, Rhode Island, and Utah are the only jurisdictions to have all counties at low Community Levels.

*Includes the 50 states, the District of Columbia, and U.S. territories.

Individual-Level Prevention Steps You Can Take Based on Your COVID-19 Community Level

LOW, MEDIUM, AND HIGH

At all COVID-19 Community Levels:

- Stay up to date on vaccination, including recommended booster doses.
- Maintain ventilation improvements.
- Avoid contact with people who have suspected or confirmed COVID-19.
- Follow recommendations for isolation if you have suspected or confirmed COVID-19.
- Follow the recommendations for what to do if you are exposed to someone with COVID-19.
- If you are at high risk of getting very sick, talk with a healthcare provider about additional prevention actions.

MEDIUM AND HIGH

When the COVID-19 Community Level is Medium or High:

- If you are at high risk of getting very sick, wear a high-quality mask or respirator (e.g., N95) when indoors in public
- If you have household or social contact with someone at high risk for getting very sick, consider self-testing to detect infection before contact, and consider wearing a high-quality mask when indoors with them

HIGH

When the COVID-19 Community Level is High:

- Wear a high-quality mask or respirator.
- If you are at high risk of getting very sick, consider avoiding non-essential indoor activities in public where you could be exposed.

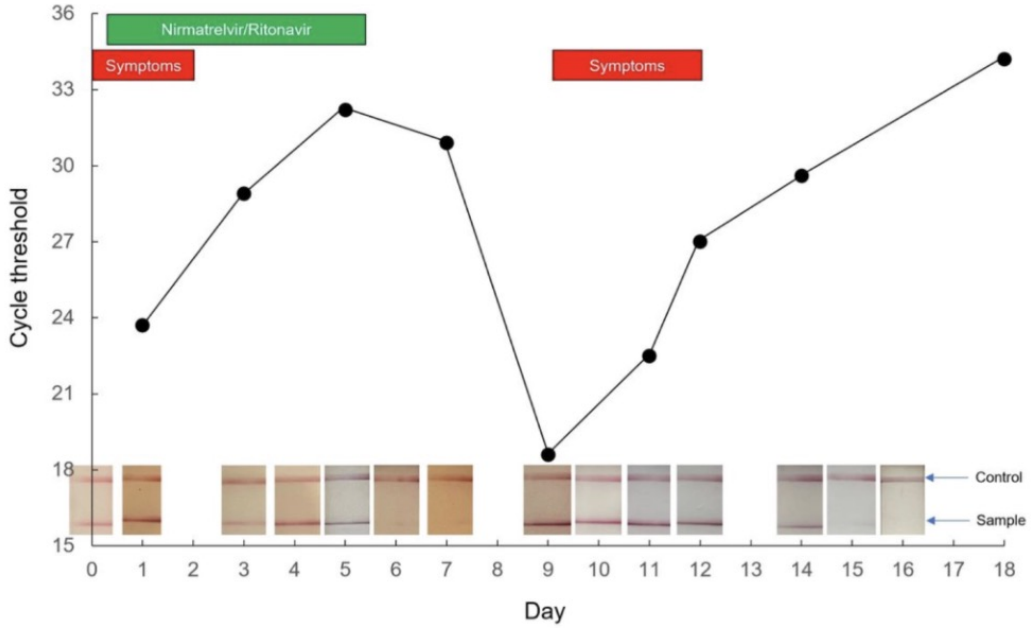
Common Questions

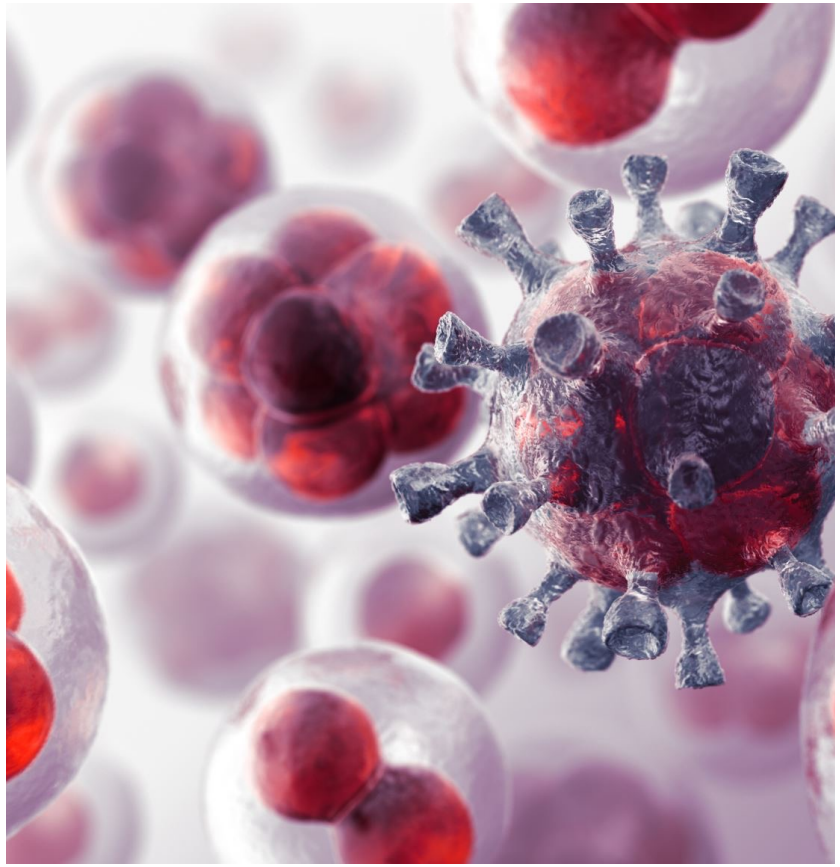
What do I do with a a patient with acute COVID-19 that after finishing a 5-day course of Paxlovid with clinical improvement and a negative Ag test on day 6 started with symptoms and the Ag test is now positive on day 7?

An emergency room nurse had acute COVID-19, is asymptomatic but her Ag test is positive on day 5, can the nurse transmit the virus? and when can she return to work?

Viral Rebound Hypothesis

- SARS-COV-2 Viral suppression is achieved by antiviral but when discontinued immune system has not kicked in and virus rebounds
- If true, this would not happen in patients without antivirals





https://blogs.jwatch.org/hiv-id-observations/index.php/more-on-relapses-after-paxlovid-treatment-for-covid-19/2022/05/04/

Nirmatrelvir–Ritonavir and Viral Load Rebound in Covid-19

The frequency and clinical implications of potential recurrence of Covid-19 are unknown.

Data on the occurrence of viral load rebound from a phase 2–3, double-blind, randomized, controlled trial (EPIC-HR)

- Enrolled 2246 symptomatic, unvaccinated outpatient adults at high risk for progression to severe Covid-19 within 5 days after symptom onset from July 2021 through December 2021.
- Patients received nirmatrelvir (300 mg) plus ritonavir (100 mg) or placebo every 12 hours for 5 days.
- Nasopharyngeal swab samples were collected on the first day of enrollment (baseline) and then on trial days 3, 5, 10, and 14.

Recurrence of Covid-19 was defined according to prespecified criteria for viral load rebound:

- A half-log increase in viral load on day 10 or day 14 if only one value was available or on days 10 and 14 if both values were available.

N Engl J Med 2022; 387:1047-1049 DOI: 10.1056/NEJMc2205944

Nirmatrelvir–Ritonavir and Viral Load Rebound in Covid-19: RESULTS

Rebound occurred in 23 of 990 patients (2.3%) in the nirmatrelvir–ritonavir group and in 17 of 980 **(1.7%) in the placebo group**

- Results regarding viral load rebound were similar in the nirmatrelvir–ritonavir group and the placebo group
- No hospitalizations occurred among the patients with viral load rebound in the placebo group, and no deaths were observed in either group with rebound.
- **The incidence of viral load rebound was similar in the nirmatrelvir–ritonavir group and the placebo group.**

The occurrence of viral load rebound was not retrospectively associated with:

- Low nirmatrelvir exposure, recurrence of moderate-to-severe symptoms, or development of resistance to nirmatrelvir.

N Engl J Med 2022; 387:1047-1049 DOI: 10.1056/NEJMc2205944

Nirmatrelvir–Ritonavir and Viral Load Rebound in Covid-19: RESULTS

Limitations

- The clinical trial was conducted when most infections were caused by the B.1.617.2 (delta) variant.
- VL as determined by PCR does not translate directly to the presence of infectious virus and is not perfectly correlated with current or new clinical symptoms.

Other thoughts

- Omicron recurrence has also been observed in untreated patients.
- In the ACTIV-2/A5401 study, rebounds in VL and clinical symptoms were relatively common among participants who had not received any antiviral agents

Conclusions:

- Our findings suggest that viral load rebound may be a feature of some SARS-CoV-2 infections and that the natural history of Covid-19 requires continued study.

N Engl J Med 2022; 387:1047-1049 DOI: 10.1056/NEJMc2205944

Viral and Symptom Rebound in Untreated COVID-19 Infection

Methods

- The study population included 568 participants enrolled in the ACTIV-2/A5401 platform trial who received placebo.
- Anterior nasal swabs were collected for SARS-CoV-2 RNA testing on days 0-14, 21 and 28.
- Participants recorded the severity of 13 targeted symptoms daily from day 0 to 28.

Definitions

- Viral rebound was defined as ≥0.5 $\log_{10}$ viral RNA copies/mL increase
- Symptom rebound was defined as a 4-point total symptom score increase from baseline.

medRxiv 2022.08.01.22278278; doi: https://doi.org/10.1101/2022.08.01.22278278**doi:** https://doi.org/10.1101/2022.08.01.22278278

Viral and Symptom Rebound in Untreated COVID-19 Infection

Findings

- In both the primary and secondary analyses, 12% of participants had viral rebound.
- Symptom rebound occurred in 27% of participants after initial symptom improvement and in 10% of participants after initial symptom resolution.
- The combination of high-level viral rebound to ≥5.0 $\log_{10}$ RNA copies/mL and symptom rebound after initial improvement was observed in 1-2% of participants.

Interpretation

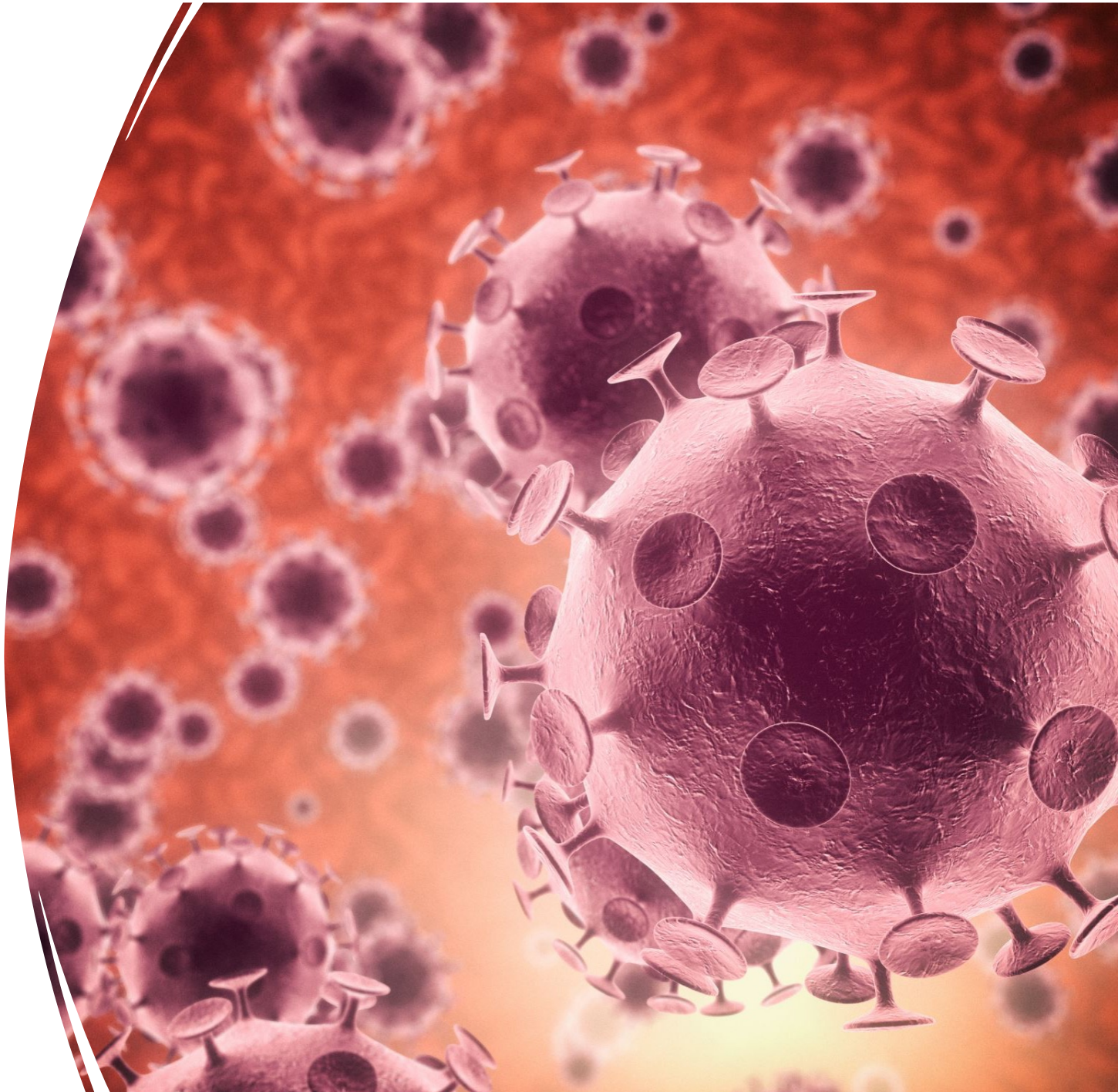
- Viral RNA rebound or symptom relapse in the absence of antiviral treatment is common, but the combination of high-level viral and symptom rebound is rare.

medRxiv 2022.08.01.22278278; doi: https://doi.org/10.1101/2022.08.01.22278278**doi:** https://doi.org/10.1101/2022.08.01.22278278

SARS-CoV-2 Viral Rebound

- Viral rebound seems to be part of the natural history of some patients infected with SARS-COV-2

- Management has not been defined



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Onset and window of SARS-CoV-2 infectiousness and temporal correlation with symptom onset: a prospective, longitudinal, community cohort study

Background

- Knowledge of the window of SARS-CoV-2 infectiousness is crucial in developing policies to curb transmission.
- Mathematical modelling based on scarce empirical evidence and key assumptions has driven isolation and testing policy, but real-world data are needed.
- This study aimed to characterize the infectiousness across the full course of infection in a real-world community setting.

Methods

- The ATACCC study was a UK prospective, longitudinal, community cohort of contacts of newly diagnosed, PCR-confirmed SARS-CoV-2 index cases.
- Household and non-household exposed contacts aged 5 years or older were eligible for recruitment
- The primary objective was to define the window of SARS-CoV-2 infectiousness and its temporal correlation with symptom onset.
- Viral RNA load by RT-PCR and infectious viral shedding were measured by enumerating cultivable virus daily across the course of infection.
- Participants completed a daily diary to track the emergence of symptoms

ATACCC: The Assessment of Transmission and Contagiousness of COVID-19 in Contacts

Onset and window of SARS-CoV-2 infectiousness and temporal correlation with symptom onset: a prospective, longitudinal, community cohort study

- **Enrollment**
  - **Sept 13, 2020, and March 31, 2021, 393 contacts from 327 households (the SARS-CoV-2 pre-alpha and alpha variant waves**
  - **May 24, 2021, and Oct 28, 2021, 345 contacts from 215 households (the delta variant wave).**

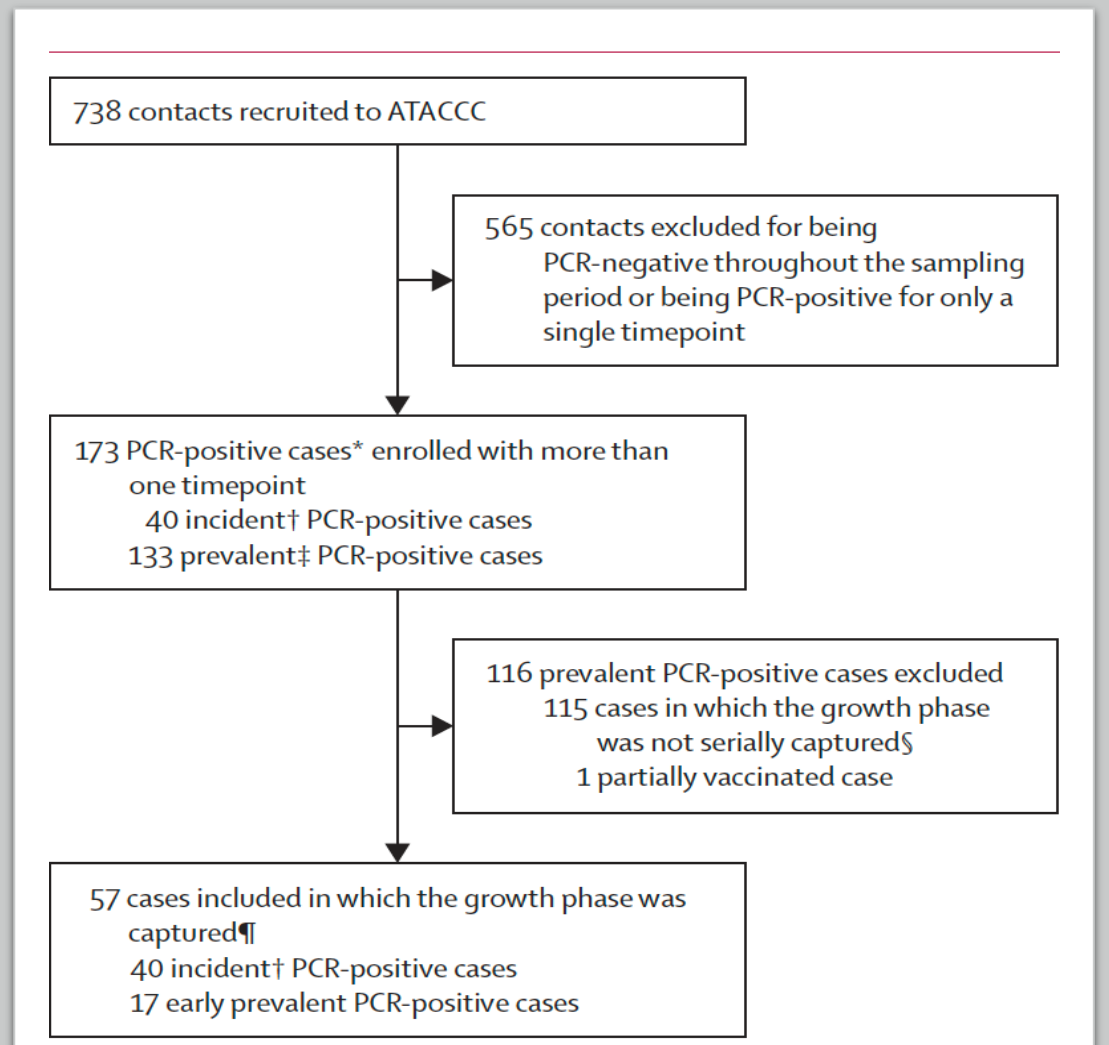


Figure 1: **Study profile** Flowchart illustrating derivation of the recently infected contacts included in subsequent analyses, from which the growth phase was serially captured. Samples from a total of 57 cases were used. ATACCC=Assessment of Transmission and Contagiousness of COVID-19 in Contacts. *PCR-positive contacts are referred to as cases throughout. †Incident cases were PCR negative on the day of study enrolment and became PCR positive during the study. ‡Prevalent cases were PCR positive from the day of recruitment. §Stringent criteria were applied to the prevalent cases to select only contacts in whom the growth phase was fully captured. ¶13 cases pre-alpha variant, unvaccinated; 12 cases alpha variant, unvaccinated; 7 cases delta variant, unvaccinated; and 25 cases delta variant, fully vaccinated. In some analyses, not all 57 cases were included; see the appendix (p 3) for the full exclusion criteria.

Onset and window of SARS-CoV-2 infectiousness and temporal correlation with symptom onset: a prospective, longitudinal, community cohort study

The median duration of infectiousness was 5 (IQR 3–7) days

63% (24/38) cases had PCR-detectable virus before symptom onset

- **Only seven (20%) of 35 shed infectious virus presymptomatically**

65% (22/34) cases continued to shed virus at 5 days post-symptom onset and

- **24% (8/34) at 7 days post-symptom onset**

Correlation of LFD results with infectious viral shedding was poor during the viral growth phasephase (sensitivity 67%[95% CI 59–75])

- **But high during the decline and 92% respectively [95% CI 86–96]).**

ATACCC: The Assessment of Transmission and Contagiousness of COVID-19 in Contacts
LFD: lateral flow device (antigen test)

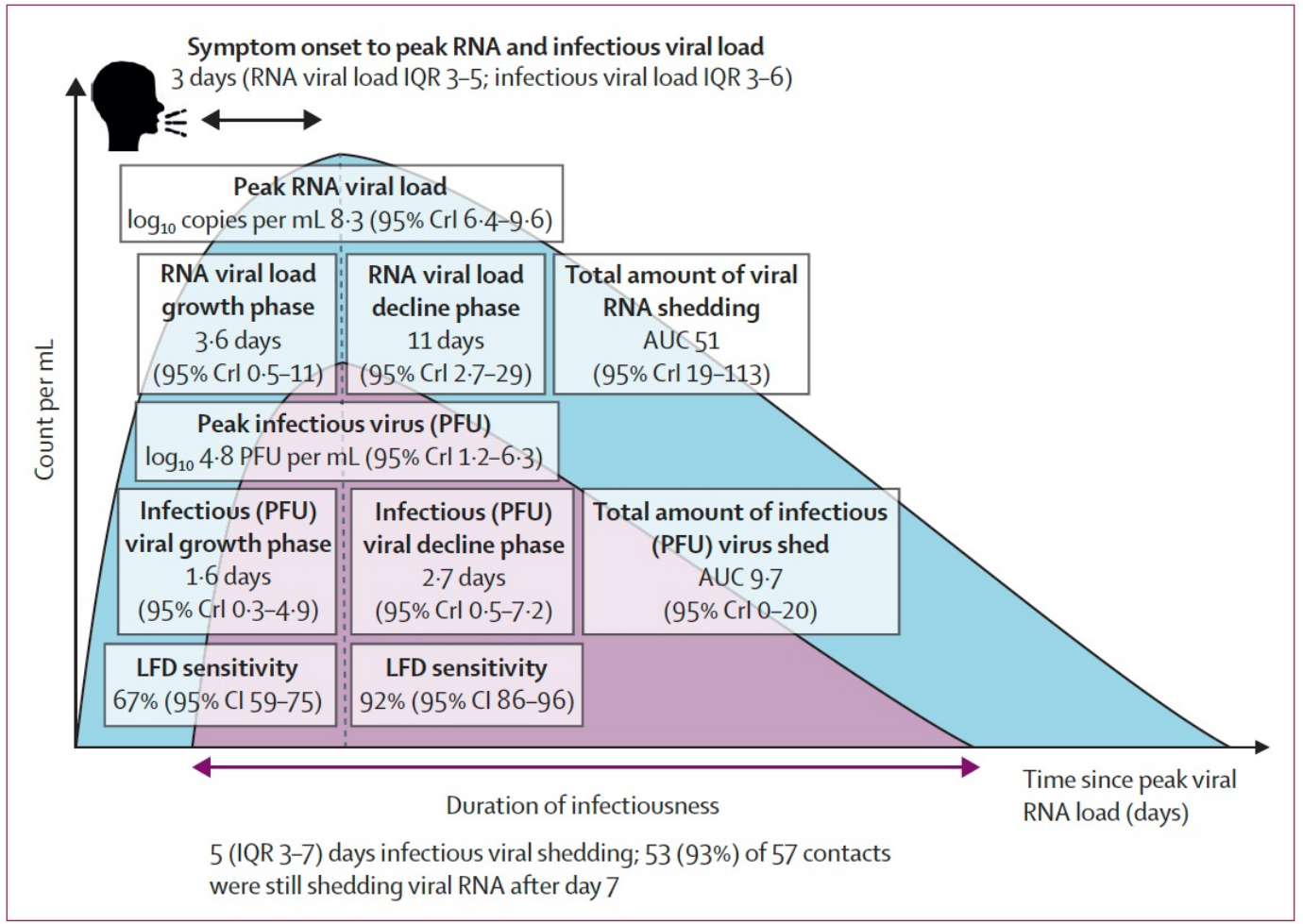


Figure 2: **Window and kinetics of SARS-CoV-2 infectiousness in recently infected contacts** Graphical summary illustrating the window and kinetics of SARS-CoV-2 infectiousness in recently infected contacts in whom the growth phase was serially captured. The blue curve depicts the typical viral RNA kinetics detected by combined nose and throat swabs, and the purple curve depicts the typical infectious viral kinetics as measured by quantitative plaque assays. All point estimates are medians. The duration of infectiousness (as measured by plaque assay) was measured in 42 cases. Time from symptom onset to peak RNA viral load was measured in 38 cases, and symptom onset to peak infectious viral load in 35 cases. LFD sensitivity was measured against infectious viral shedding during pre-peak to peak viral shedding (n=270 tests) and post-peak viral shedding (n=337 tests). Peak shedding, duration of the growth phase, decline phase, and total shedding were estimated with Bayesian hierarchical modelling (n=57 cases for viral RNA shedding and n=47 cases for infectious viral shedding, as measured by plaque assays). This figure is a simplified summary of the empirical data in figure 3 and the Bayesian modelling data in the appendix p (9). ATACCC=Assessment of Transmission and Contagiousness of COVID-19 in Contacts. AUC=area under the curve. CrI=credible interval. LFD=lateral flow device. PFU=plaque-forming unit.

Onset and window of SARS-CoV-2 infectiousness and temporal correlation with symptom onset: a prospective, longitudinal, community cohort study

Interpretation

- **Less than a quarter of COVID-19 cases shed infectious virus before symptom onset**
- Under a crude 5-day self-isolation period from symptom onset, two-thirds of cases released into the community would still be infectious, but with reduced infectious viral shedding.
- **These findings support a role for LFDs (antigen test) to safely accelerate deisolation but not for early diagnosis, unless used daily.**
- These high-resolution, community-based data provide evidence to inform infection control guidance.

ATACCC: The Assessment of Transmission and Contagiousness of COVID-19 in Contacts
LFD: lateral flow device (antigen test)

Infection Prevention for the General Population

- **Exposure**
  - No quarantine
  - Wear a mask around others indoors and watch symptoms for 10 days
  - Test yourself at day 6 and keep wearing mask if negative for 10 days
- **Isolation**
  - If mild, stay home at least 5 days until no fever 24 hrs, improved symptoms
  - If moderate (SOB), severe (hospitalized) or immunocompromised, isolate for 10 days (ask your doctor if hospitalized or immunocompromised)

https://www.cdc.gov/coronavirus/2019-ncov/your-health/isolation.html?CDC

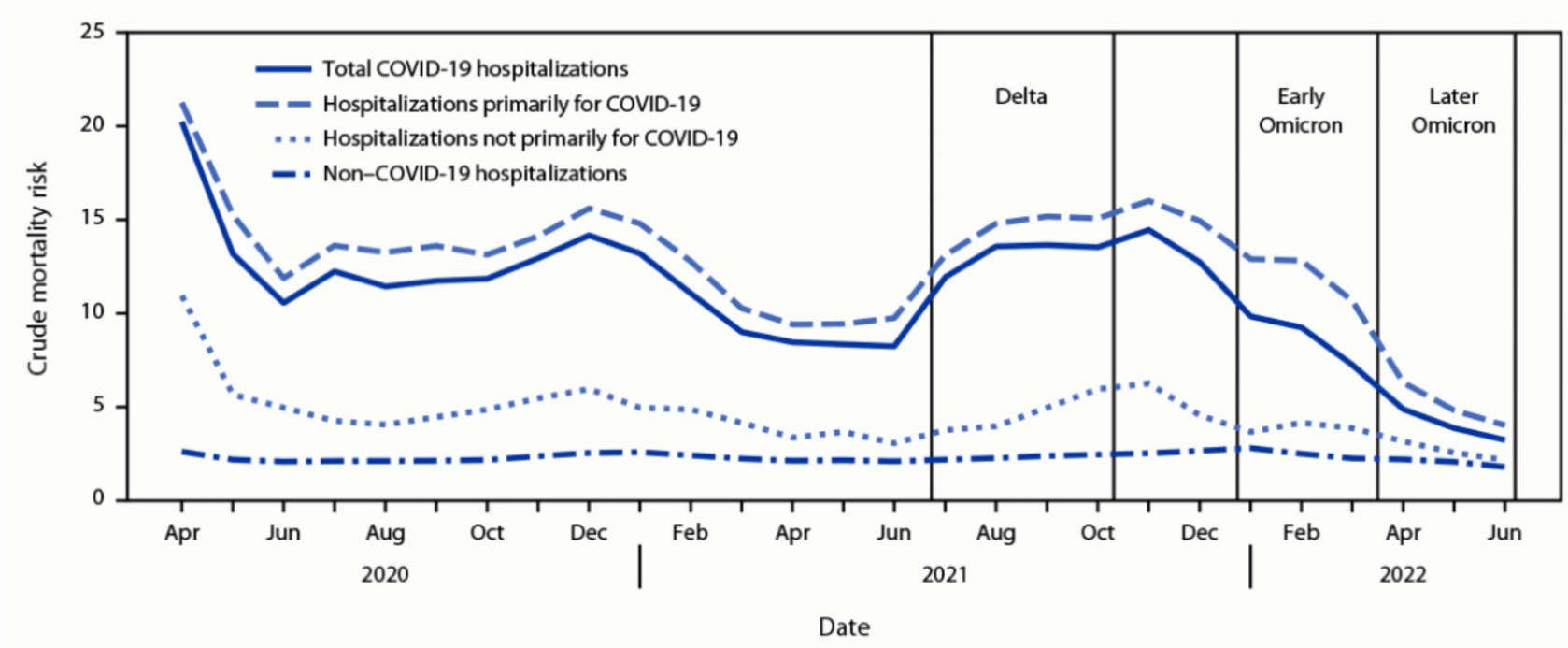
Infection Prevention for the Healthcare Professionals

- Asymptomatic or mild:
  - Isolate through day 5 and mask 10 days
- Moderate or severe:
  - Isolate through day 10 (day 20 for severe)
- Immunocompromised:
  - Isolate through day 20
- Test serially and consult a specialist:
  - **Need two negative tests 24 hours apart to end isolation**
  - Antigen test or Nucleic Acid Amplification Test are OK
  - Still testing positive at day 30: consider genomic sequencing or viral culture

https://www.cdc.gov/coronavirus/2019-ncov/your-health/isolation.html?CDC

Mortality Risk Among Patients Hospitalized Primarily for COVID-19 During the Omicron and Delta Variant Pandemic Periods — United States, April 2020–June 2022

FIGURE. Crude mortality risk* for total COVID-19 hospitalizations, hospitalizations primarily for COVID-19, hospitalizations not primarily for COVID-19,† and non–COVID-19 hospitalizations — Premier Healthcare Database Special COVID-19 Release,§ United States, April 2020–June 2022¶



* In-hospital mortality was defined by a discharge status of expired. Crude mortality risk was calculated as in-hospital deaths per 100 hospitalizations.

Adjei S, Hong K, Molinari NM, et al. Mortality Risk Among Patients Hospitalized Primarily for COVID-19 During the Omicron and Delta Variant Pandemic Periods — United States, April 2020–June 2022. MMWR Morb Mortal Wkly Rep 2022;71:1182–1189. DOI: http://dx.doi.org/10.15585/mmwr.mm7137a4.

Mortality Risk Among Patients Hospitalized Primarily for COVID-19 During the Omicron and Delta Variant Pandemic Periods — United States, April 2020–June 2022

What is already known about this topic?

- Risk for severe COVID-19 increases with age, disability, and underlying medical conditions.
- The SARS-CoV-2 Omicron variant is more infectious but has been associated with less severe disease.

What is added by this report?

- In-hospital mortality among patients hospitalized primarily for COVID-19 decreased from 15.1% (Delta period) to 4.9% (later Omicron period; April–June 2022), despite high-risk patient groups representing a larger proportion of hospitalizations.
- During the later Omicron period, the majority of in-hospital deaths occurred among adults aged ≥65 years (81.9%) and persons with three or more underlying medical conditions (73.4%).

What are the implications for public health practice?

- Vaccination, early treatment, and appropriate nonpharmaceutical interventions remain important public health priorities to prevent COVID-19 deaths, especially among persons most at risk.

Adjei S, Hong K, Molinari NM, et al. Mortality Risk Among Patients Hospitalized Primarily for COVID-19 During the Omicron and Delta Variant Pandemic Periods — United States, April 2020–June 2022. MMWR Morb Mortal Wkly Rep 2022;71:1182–1189. DOI: http://dx.doi.org/10.15585/mmwr.mm7137a4.

Prevention

Four available vaccine for primary series

- Moderna
- Pfizer BioNTech
- Novavax (protein subunit) age 12 and up
- Janssen (adenovirus vector) age 18 and up →TTS clot warning

Optional 8-week interval between doses for #1, 2 and 3

- Minimizes myopericarditis risk
- Not for immunocompromised, age > 65, outbreak response

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html

Use of unapproved Janssen COVID-19 Vaccine for active immunization to prevent COVID-19 under this EUA is limited to the following: (all requirements must be met)

The Janssen COVID-19 Vaccine is authorized for use in individuals 18 years of age and older

- For whom other FDA-authorized or approved COVID-19 vaccines are not accessible or clinically appropriate, and in individuals 18 years of age and older who elect to receive the Janssen COVID-19 Vaccine because they would otherwise not receive a COVID-19 vaccine.

The vaccination provider must

- Communicate to the individual receiving the Janssen COVID-19 Vaccine or their caregiver, information consistent with the "Fact Sheet for Recipients and Caregivers" prior to the individual receiving the Janssen COVID-19 Vaccine.
- Include vaccination information in the state/local jurisdiction's Immunization Information System (IIS) or other designated system. 7 Revised: May/05/2022

The vaccination provider is responsible for mandatory reporting of the following to the Vaccine Adverse Event Reporting System (VAERS):

- Vaccine administration errors whether associated with an adverse event or not
- Serious adverse events (irrespective of attribution to vaccination)
- Cases of Multisystem Inflammatory Syndrome (MIS) in adults
- Cases of COVID-19 that result in hospitalization or death

Prevention

New Booster Recommendation:

- Moderna bivalent vaccine for all age 18 and up
- Pfizer bivalent vaccine for all age 12 and up

Recommend BIVALENT booster $\geq$ 2 months after last vaccine for

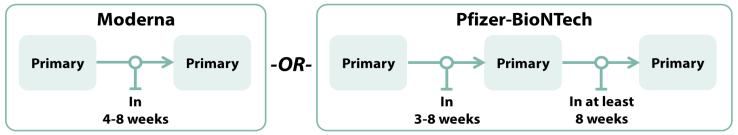
- Anyone who completed the primary series
- Anyone who received a booster before

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html

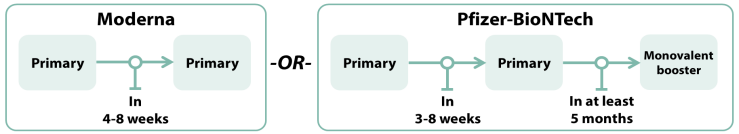
COVID-19 Vaccination Schedule and Monoclonal Antibodies Prophylaxis

COVID-19 Vaccination Schedule for People who are NOT Moderately or Severely Immunocompromised

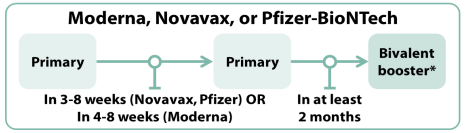
People ages 6 months through 4 years



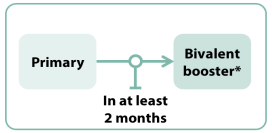
People ages 5 through 11 years



People ages 12 years and older



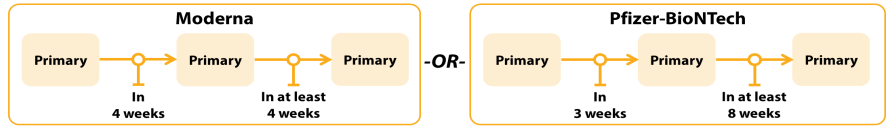
People ages 18 years and older who previously received Janssen primary series dose†



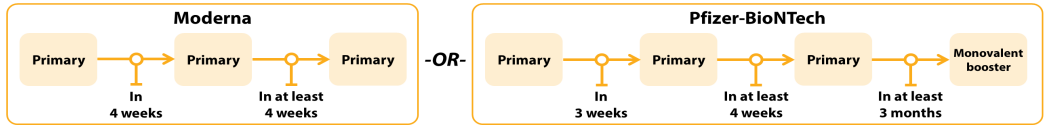
*The bivalent booster dose is administered at least 2 months after completion of the primary series. For people who previously received a monovalent booster dose(s), the bivalent booster dose is administered at least 2 months after the last monovalent booster dose.
†Janssen COVID-19 Vaccine should only be used in certain limited situations. See: https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us-appendix.html#appendix-a

COVID-19 Vaccination Schedule for People who are Moderately or Severely Immunocompromised

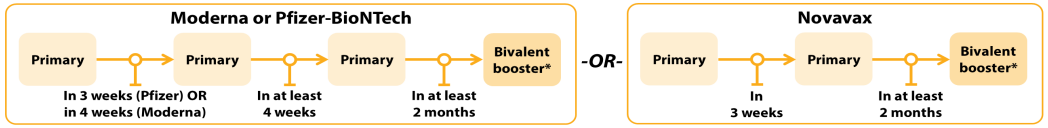
People ages 6 months through 4 years



People ages 5 through 11 years



People ages 12 years and older



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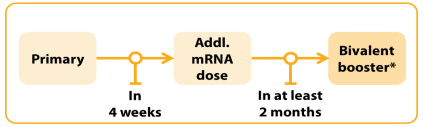
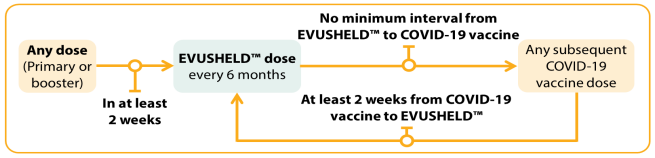


Monoclonal antibodies (EVUSHELD™) for COVID-19 pre-exposure prophylaxis

People ages 12 years and older (must weigh at least 40kg)



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†Janssen COVID-19 Vaccine should only be used in certain limited situations. See: https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us-appendix.html#appendix-a

NIH Treatment Guideline Update- August 18, 2022
Immunocompromised patients who are hospitalized

Use	Use the same antivirals and immunomodulatory drugs as for the non-compromised
Consider	Stopping or decreasing immunosuppressive meds with a specialist's help
Consider	Extending remdesivir past 5 days to 10 days
Avoid	Steroids if on minimal O2 and early on in disease (<10 days)
Add	IL-6 and JAK inhibitors to dexamethasone, weighing risks with the specialist

https://www.covid19treatmentguidelines.nih.gov/special-populations/immunocompromised/

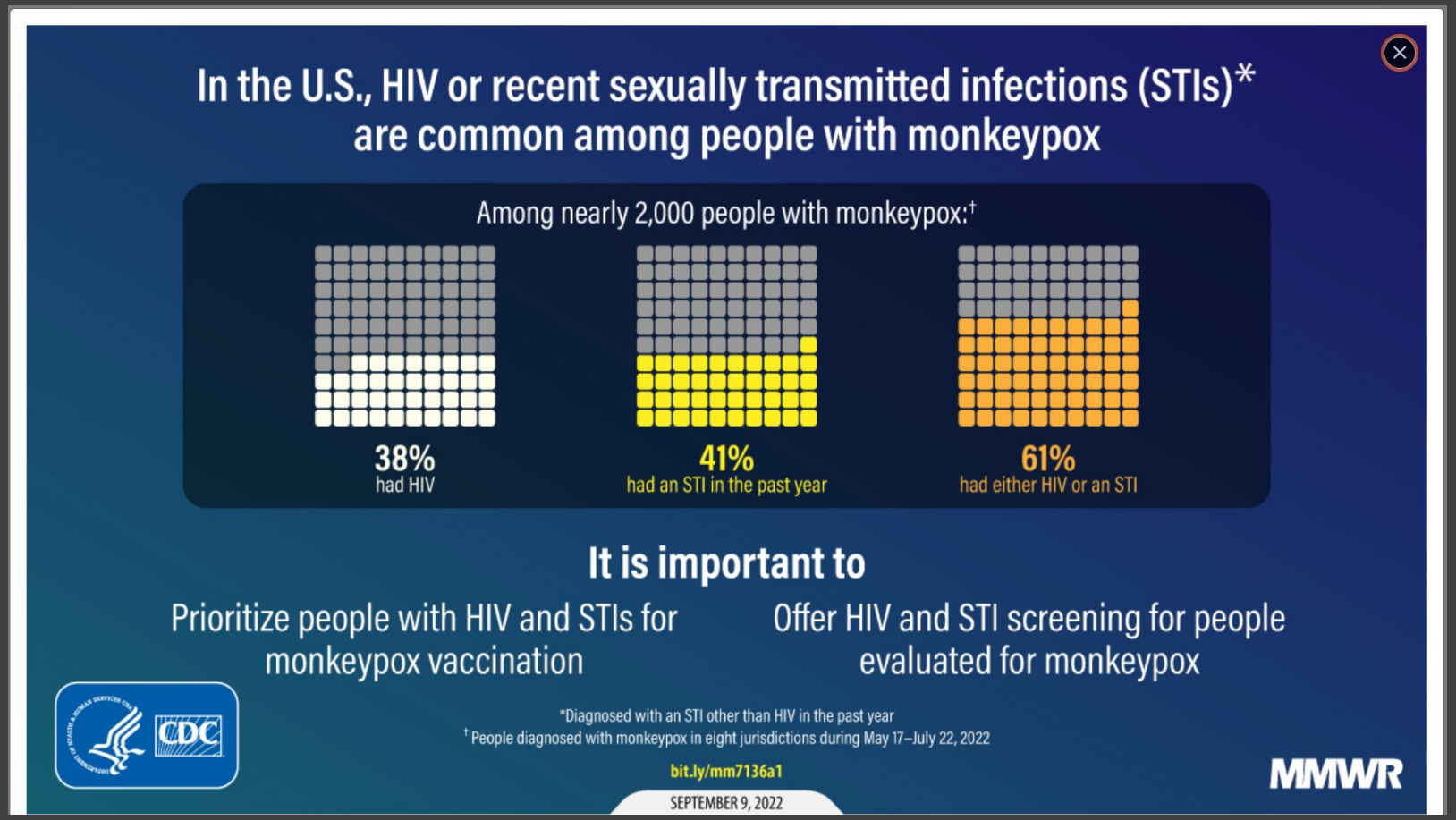
Outline

Covid-19

- Epidemiology
- Common questions
- Viral Rebound
- Viral Infectiousness
- Omicron Mortality
- Prevention
- Treatment

Monkeypox

- Are other STIs in patients with Monkeypox frequent?
- Vaccination



- Curran KG, Eberly K, Russell OO, 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.

Methods

Probable and confirmed cases of monkeypox from eight health departments

- Diagnosed From May through July 22, 2022
- Occurring among persons aged ≥18 years
- Matched to local HIV and STI surveillance data

Among persons with monkeypox, prevalence of diagnosed HIV infection was was calculated.

HIV surveillance data were used to assess:

- Receipt of HIV care
- HIV viral suppression (an indication of antiretroviral therapy use)
- Most recent CD4 count
- Time since HIV diagnosis

STI surveillance data were used to assess chlamydia, gonorrhea, and syphilis diagnoses.

Monkeypox signs, symptoms, and outcomes were compared according to HIV infection status.

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Results

Among 1,969 persons with monkeypox

- 755 (38%) had received an HIV diagnosis,
- 816 (41%) had another reportable STI diagnosed in the preceding year
- 363 (18%) had both
- 1,208 (61%) persons had either

Since May 1, 2022, 19 (1%) persons with monkeypox had received an HIV diagnosis

- 297 (15%) had received an STI diagnosis.

Persons with monkeypox and HIV infection more commonly had received an STI diagnosis in the preceding year

- (48%) than had those without HIV infection (37%).

Among persons with monkeypox

- The weekly percentage with concurrent HIV infection increased over time (31%–44% by July).
- The percentage of persons with monkeypox who had HIV infection was higher in older age groups: ≥55 years, was 59%.

HIV prevalence also varied by race and ethnicity

- 63% among non-Hispanic Black or African American (Black), 41% among Hispanic or Latino (Hispanic), 28% among non-Hispanic White, and 22% among non-Hispanic Asian

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Results

Among 755 persons with monkeypox and HIV infection

- 713 (94%) received HIV care in the preceding year
- 618 (82%) were virally suppressed
- 586 (78%) had CD4 count ≥350/μL.
- The 51 persons with unsuppressed HIV viral load were more likely than were the 513 with suppressed viral load to have lymphadenopathy (59% versus 46%), generalized pruritis (59% versus 42%), rectal bleeding (25% versus 18%), and purulent or bloody stools (22% versus 14%).
- Compared with persons with CD4 counts ≥350/μL, those with CD4 counts <350/μL more commonly experienced fever (69% versus 59%) and generalized pruritis (53% versus 42%).

Among persons without HIV 67% (115/172) reported current PrEP use.

Compared with persons with monkeypox who did not have HIV infection

- Those with HIV infection were more likely to report rectal pain (34% versus 26%), tenesmus (20% versus 12%), rectal bleeding (19% versus 12%), purulent or bloody stools (15% versus 8%), and proctitis (13% versus 7%),
- Were less likely to report lymphadenopathy (48% versus 53%).

Among 1,308 (66%) persons with information on hospitalization

- The proportion of persons hospitalized was lower among those without HIV infection (3%, 26 of 798) than among those with HIV infection (8%, 42 of 510).
- Among 45 persons with HIV infection who were not virally suppressed, 12 (27%) were hospitalized
- Among 61 with a CD4 count <350 cells/μL, nine (15%) were hospitalized.

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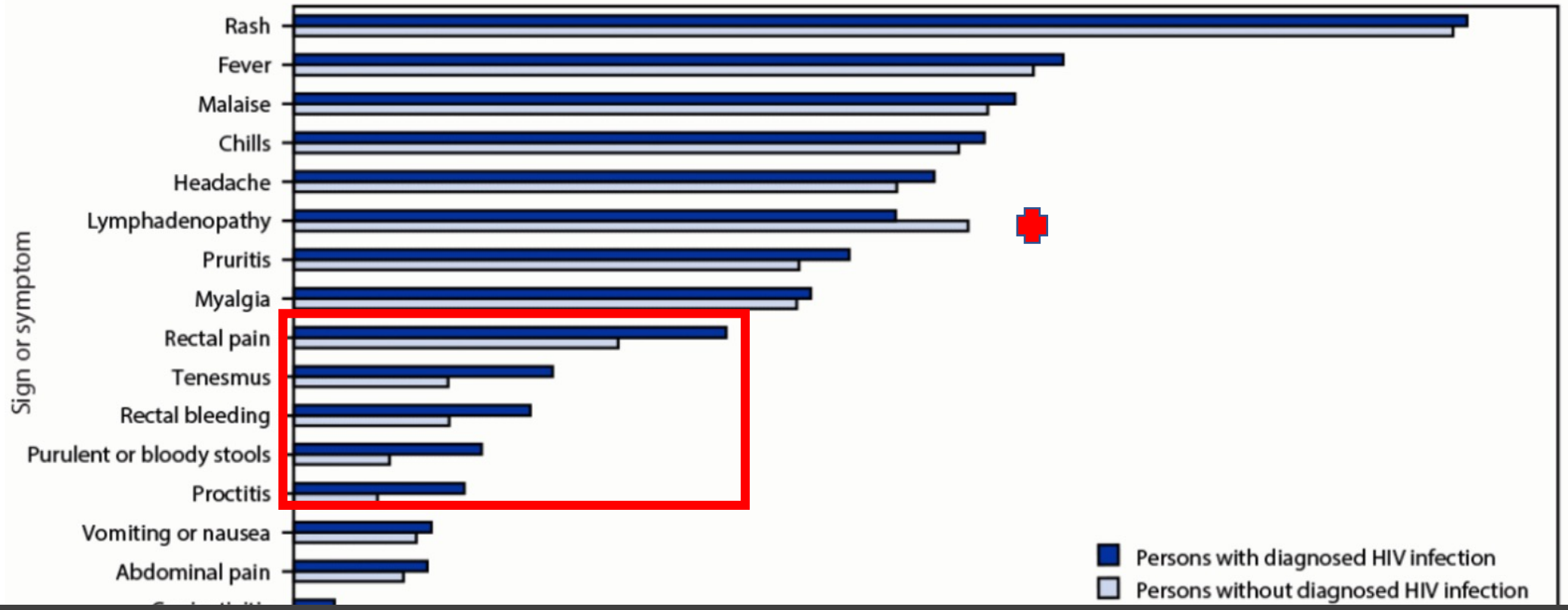
FIGURE. Signs and symptoms of monkeypox,*,† by HIV infection status§ — eight U.S. jurisdictions,¶ May 17–July 22, 2022



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Summary

What is already known about this topic?	• In the current global monkeypox outbreak, HIV infection and sexually transmitted infections (STIs) are highly prevalent among persons with monkeypox.
What is added by this report?	• Among 1,969 persons with monkeypox in eight U.S. jurisdictions, 38% had HIV infection, and 41% had an STI in the preceding year. Among persons with monkeypox, hospitalization was more common among persons with HIV infection than persons without HIV infection.
What are the implications for public health practice?	• It is important to leverage systems for delivering HIV and STI care and prevention and prioritize persons with HIV infection and STIs for vaccination. Screening for HIV and other STIs and other preventive care should be considered for persons evaluated for monkeypox, with HIV care and HIV preexposure prophylaxis offered to eligible persons.

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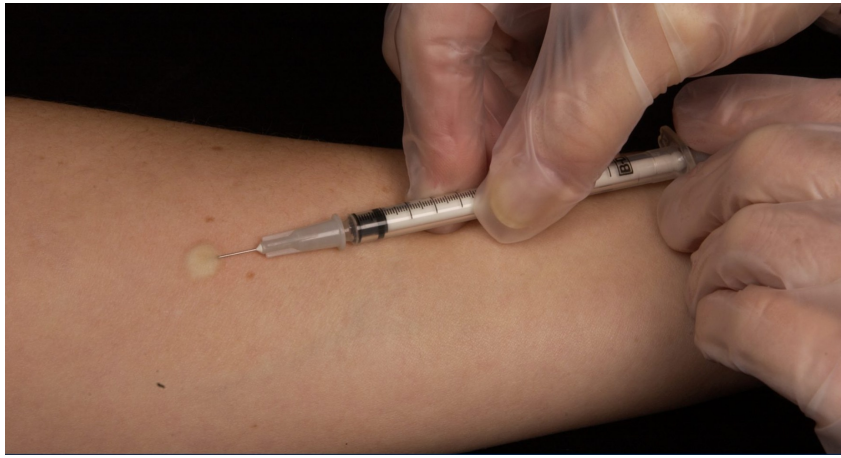
Monkeypox Prevention: Jynneos Vaccine

How do you give it?

- Adults ≥ 18 years old:
  - Subcutaneous vaccination: 0.5 ml per dose is standard when quantities allow
  - Intradermal vaccination (like a PPD TB skin test): 0.1 ml per dose. ← IHS Preferred
    - FDA EUA: discuss EUA and give the form to patient
- People < 18: Subcutaneous vaccine only, with EUA
- History of Keloid scarring: Subcutaneous vaccine only

REPEAT the dose in 4 weeks.

Immunity peaks in 2 weeks after second dose



Monkeypox Prevention in the IHS 9/9/2022 JYNNEOS Vaccine Recommendations

Anyone (any sexual orientation or gender identity) who has had close physical contact with someone who has monkeypox in the last 14 days.

Anyone (any sexual orientation or gender identity) who:

- Has had multiple sexual partners in the last 14 days
- Has had sexual partners they did not previously know in the last 14 days
- Has had close physical contact in a venue where anonymous/group sex may occur in the last 14 days
- Was diagnosed with gonorrhea or syphilis in the past three months
- Already uses or is eligible for HIV PrEP
- Engages in commercial and/or transactional sex

Anyone (any sexual orientation or gender identity) identified by public health as a known high-risk contact of someone who has monkeypox.

Monkeypox Prevention: JYNNEOS Vaccine

Who should not get JYNNEOS vaccine?

- Anaphylaxis to JYNNEOS vaccine (contraindication)

Which patients should you be careful with (PRECAUTION):

- Anaphylaxis to gentamicin or ciprofloxacin (precaution)
- Anaphylaxis to chicken/eggs and avoiding these foods (precaution)
- Moderate illness with or without fever. (precaution-consider delay)

Precaution:

- Discuss risks and benefits, and observe 30 minutes or consult allergist first

Monkeypox Prevention: JYNNEOS Vaccine

Can I co-administer JYNNEOS with other vaccines?

- In general, yes!
- OK with Pfizer, Moderna, Novavax vaccines
- Consider delaying the COVID-19 vaccine for 4 weeks for adolescent or young adult males:
  - Risk of myopericarditis seen with ACAMM2000
  - Unknown risk with JYNNEOS

OK during, illness, pregnancy, breast feeding, immunocompromised