Mpox and Sexually Transmitted Infection Among Men Who Have Sex with Men

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BACKGROUND

- Mpox is caused by a virus from the **orthopoxvirus genus**
- Human-to-human **transmission** primarily occurs through **close, skin-to-skin contact** with a person infected with mpox
- **Symptoms** include fever, rash, malaise, and chills and typically **resolve 2 to 4 weeks** after onset
- By **September 1, 2022**:
  - **21,393** confirmed cases in the **United States**
  - **157** confirmed cases in **Colorado**
- CDC technical reporting suggests nearly all cases have been **male** (cisgender and transgender men)(96.0%) and most have reported **male-to-male sexual contact** (75.1%)

OBJECTIVE

- **Among** gay, bisexual, and other men who have sex with men (**GBMSM**), quantify the **association** of mpox **positivity** in the **first 100 days** of the outbreak with:
  - A **recent history** of sexually transmitted infection (**STI**):
    - Preceding year
    - Preceding 6 months
    - Concurrently (±30 days)
  - **Current use** of pre-exposure prophylaxis for HIV (**PrEP**)
  - Pre-existing **HIV diagnosis**

METHODS

STUDY DESIGN
- Case-control study

STUDY POPULATION
- Patients tested for orthopoxvirus by PCR in a large, diverse safety-net health system in Denver, Colorado

INCLUSION CRITERIA
- Aged 18 years or older at time of orthopoxvirus test
- Sex assigned at birth or, in the absence of, a legal sex of male
- Classified as GBMSM
  - Sexual orientation, sex of sex partners, and clinical notes
- A positive (i.e., cases) or negative (i.e., controls) orthopoxvirus test result between May 25, 2022 and September 1, 2022

METHODS

DATA COLLECTION
- Orthopoxvirus test date was the earliest collection date of a positive specimen for cases and the most recent collection date for controls
- Dates of syphilis treatment and laboratory confirmed gonorrhea and chlamydia were used to determine whether an STI occurred in the preceding year, 6 months, or concurrently (±30 days)
- Current PrEP use and HIV diagnosis were identified through electronic health records (EHR)

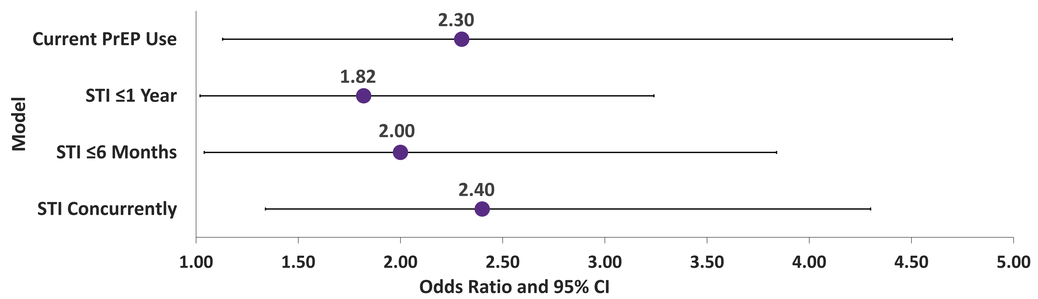
ANALYSIS
- Descriptive statistics were used to characterize cases and controls
- Bivariate and multivariate logistic regressions were used to quantify the association between mpox positivity and each exposure of interest

RESULTS

Table 1. Bivariate associations with mpox positivity

Factor	Cases n (%) n=103	Controls n (%) n=126	Total n (%) N=229	OR (95% CI)
Age Median (IQR)	32 (28-40)	32 (27-40)	32 (27-40)	-
Age Group				
18-24yr	10 (9.7)	20 (15.9)	30 (13.1)	0.89 (0.32-2.45)
25-34yr	46 (44.7)	53 (42.1)	99 (43.2)	1.54 (0.70-3.37)
35-44yr	34 (33.0)	30 (23.8)	64 (27.9)	2.01 (0.87-4.64)
45+yr	13 (12.6)	23 (18.3)	36 (15.7)	Ref.
Race/Ethnicity				
African American	15 (14.6)	10 (7.9)	25 (10.9)	2.54 (1.04-6.20)
Latino/Hispanic	43 (41.7)	42 (33.3)	85 (37.1)	1.73 (0.97-3.10)
Other/Unknown	6 (5.8)	8 (6.3)	14 (6.1)	1.27 (0.41-3.93)
White	39 (37.9)	66 (52.4)	105 (45.9)	Ref.
Living with HIV	25 (24.3)	43 (34.1)	68 (29.7)	0.62 (0.35-1.11)
Current PrEP Use	47 (60.3)	35 (42.2)	82 (50.9)	2.08 (1.11-3.90)
STI ≤1 Year	41 (39.8)	34 (27.0)	75 (32.8)	1.79 (1.03-3.12)
STI ≤6 Months	30 (29.1)	21 (16.7)	51 (22.3)	2.06 (1.09-3.87)
STI Concurrently (±30 days)	45 (43.7)	31 (24.6)	76 (33.2)	2.38 (1.36-4.17)

Figure 1. Multivariate associations with mpox positivity, adjusting for age group and race/ethnicity



CONCLUSIONS

- A **larger proportion of cases** than controls were:
  - **Over** the age of **35**
  - **Non-White**
  - **Not living with HIV**
  - Currently using **PrEP**
- Mpox positivity was **significantly associated** with:
  - **STI** in the **preceding year**, **6 months**, or **concurrently**
  - Current **PrEP** use
- This study adds to the growing body of evidence that suggests mpox **transmission** during the current outbreak **primarily occurs through sexual contact**

LIMITATIONS

- Primary source of data was **medical records**
  - Exposures could be underreported if relevant care was received at an outside organization
- **Diagnostic suspicion bias** may have led to greater testing
  - Heightened awareness of community transmission during study period
- Possible **misclassification of GBMSM** status using EHR
  - 99.13% of included GBMSM were identified through standard data elements (e.g., sexual orientation)
- Unable to account for **factors** that may have **affected community transmission** of mpox and STI among GBMSM
  - Outbreak prompted behavior change or vaccine uptake

IMPLICATIONS

- **Healthcare Providers**
  - Crucial that routine STI testing be offered when testing for mpox
- **Health Systems**
  - Consider proactively identifying GBMSM with a recent history of STI or current PrEP use for vaccine outreach

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