Clinical presentation of mpox in people with and without HIV

Michael Brady

King's College Hospital NHS Foundation Trust, UK

BHIVA
British HIV Association
2023 Spring Conference
Mon 24th – Wed 26th April
Gateshead, UK

Clinical presentation of mpox in people with and without HIV

Victoria Pilkington, Killian Quinn, Lucy Campbell, Michael Brady, Frank Post
Kings College Hospital NHS Foundation Trust

NHS
King's College Hospital
NHS Foundation Trust

King's College London

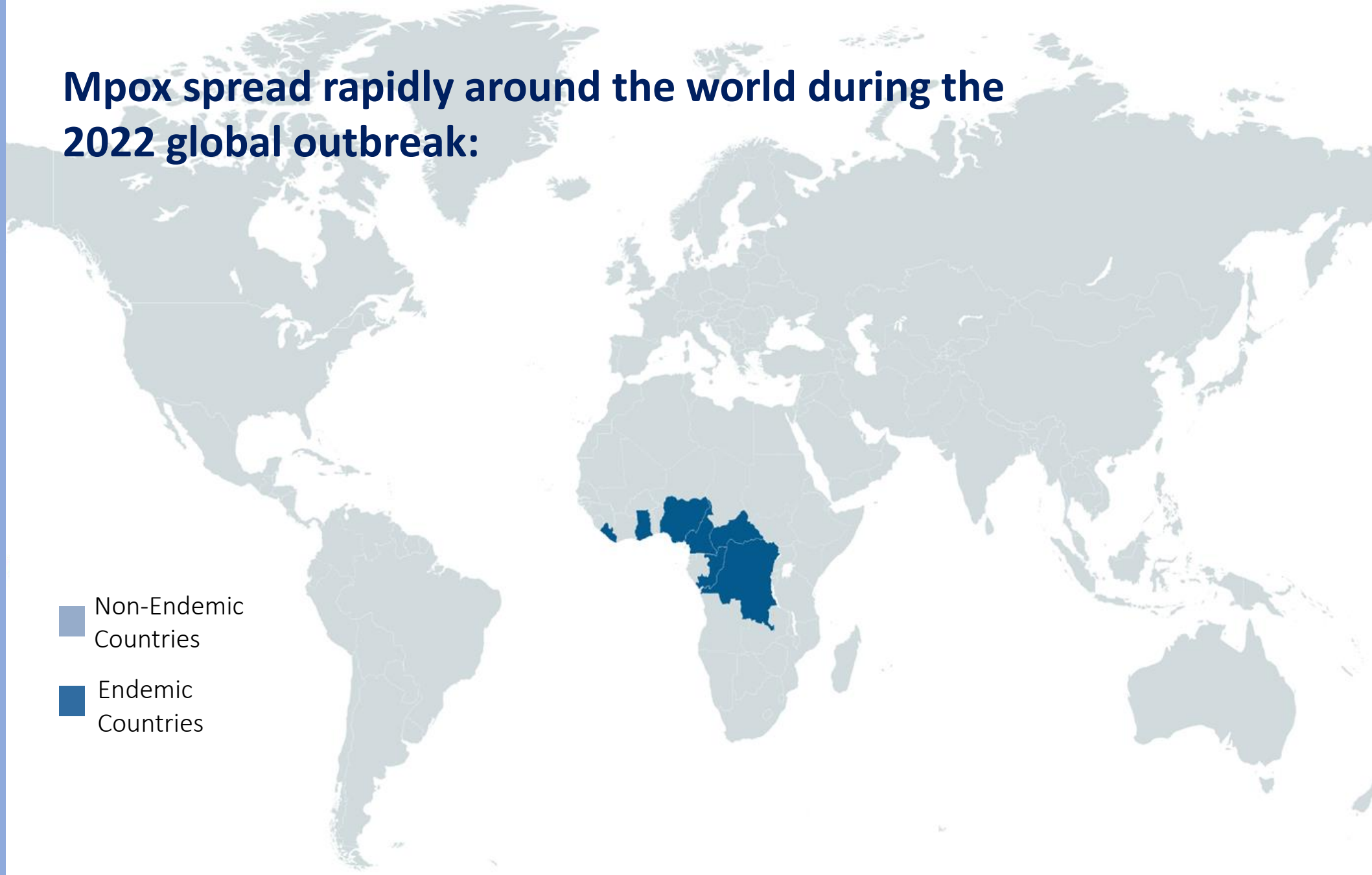
Conflicts of Interest

I have no conflicts of interest in relation to this presentation

I have received payment from Gilead for delivering training and education to healthcare professionals

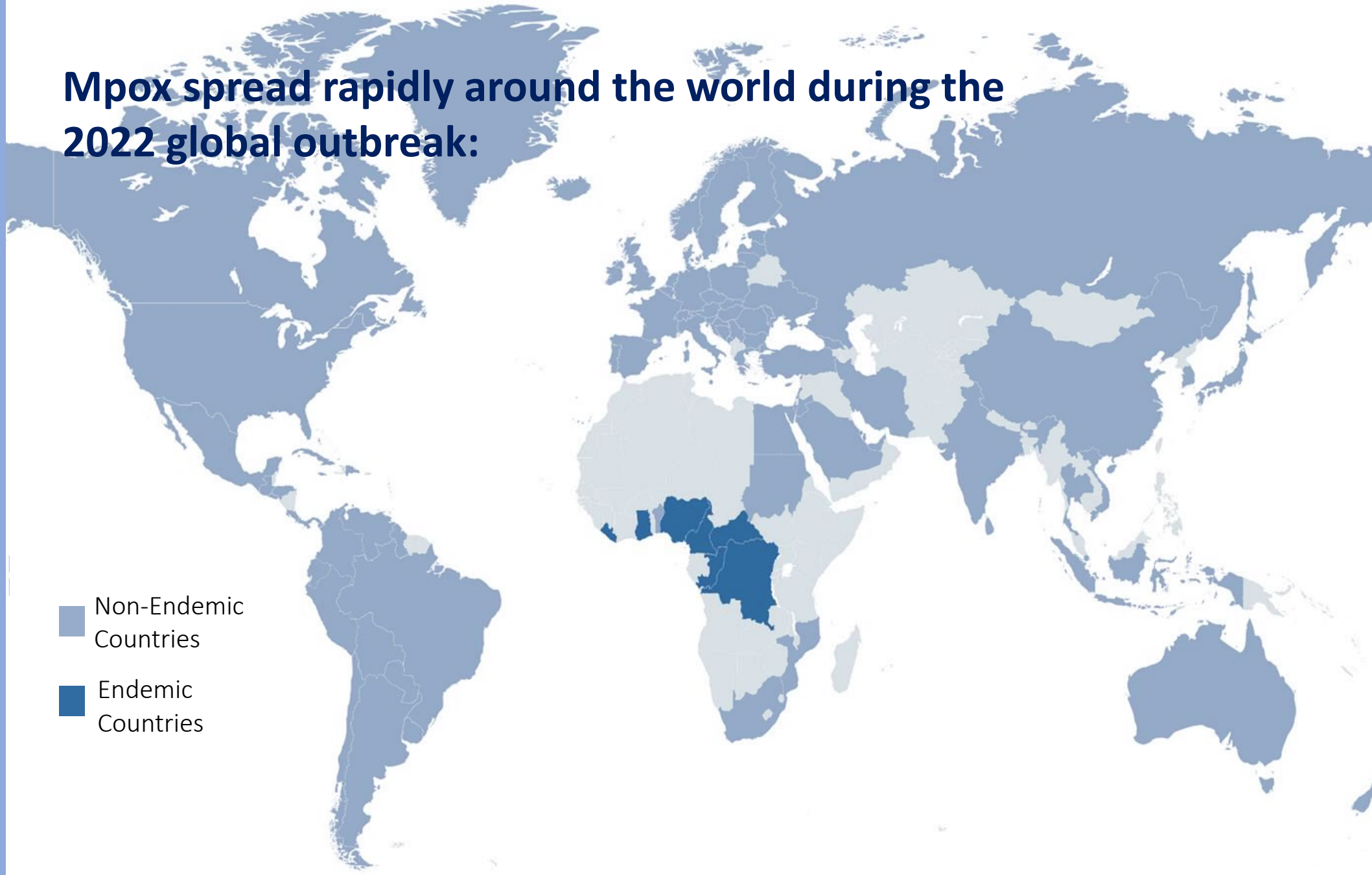
BACKGROUND

Mpox spread rapidly around the world during the 2022 global outbreak:



BACKGROUND

Mpox spread rapidly around the world during the 2022 global outbreak:



BACKGROUND

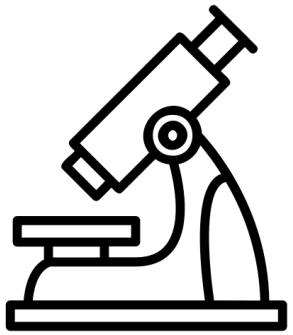
- UK surveillance data, national and international cohort studies demonstrate that people living with HIV (PLWHIV) are overrepresented among individuals with mpox.
- 27% - 36% of mpox cases are in PLWHIV[1,2]
- Morbidity and mortality is worse in people living with HIV with more advanced disease[3]
- Do people with well-controlled HIV have more severe mpox infections?

1. Patel A *et al* **Clinical features and novel presentations of human monkeypox in a central London centre during the 2022 outbreak: descriptive case series** *BMJ* 2022;378:e072410
2. Thornhill J *et al* **Human monkeypox virus infection in women and non-binary individuals during the 2022 outbreaks: a global case series** *Lancet* 2022; 400: 1953–65
3. Mitja O *et al* **Mpox in people with advanced HIV infection: a global case seriesMpox in people with advanced HIV infection: a global case series** *Lancet* 2023; 401: 939–49

METHODS

- Retrospective, observational study
- **All cases** of laboratory confirmed mpox diagnosed between May-December 2022 at Kings College Hospital in South London

- We extracted **demographic and clinical data** to allow comparison of mpox in people with and without HIV.
  - Initial assessment on presentation
  - During virtual ward follow up or inpatient stay



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METHODS

CLINICAL PATHWAY

For all individuals presenting with suspected mpox on initial assessment:

- Severity assessed (Category A/B/C)
- Mpox, VZV and HSV swabs, HIV and STI testing
- Isolation discussed
- Admitted if unwell or unable to isolate at home

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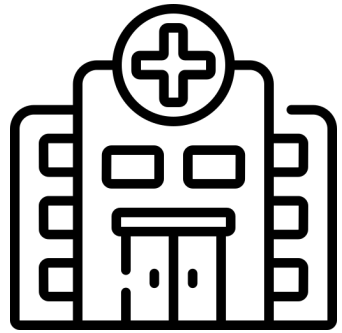
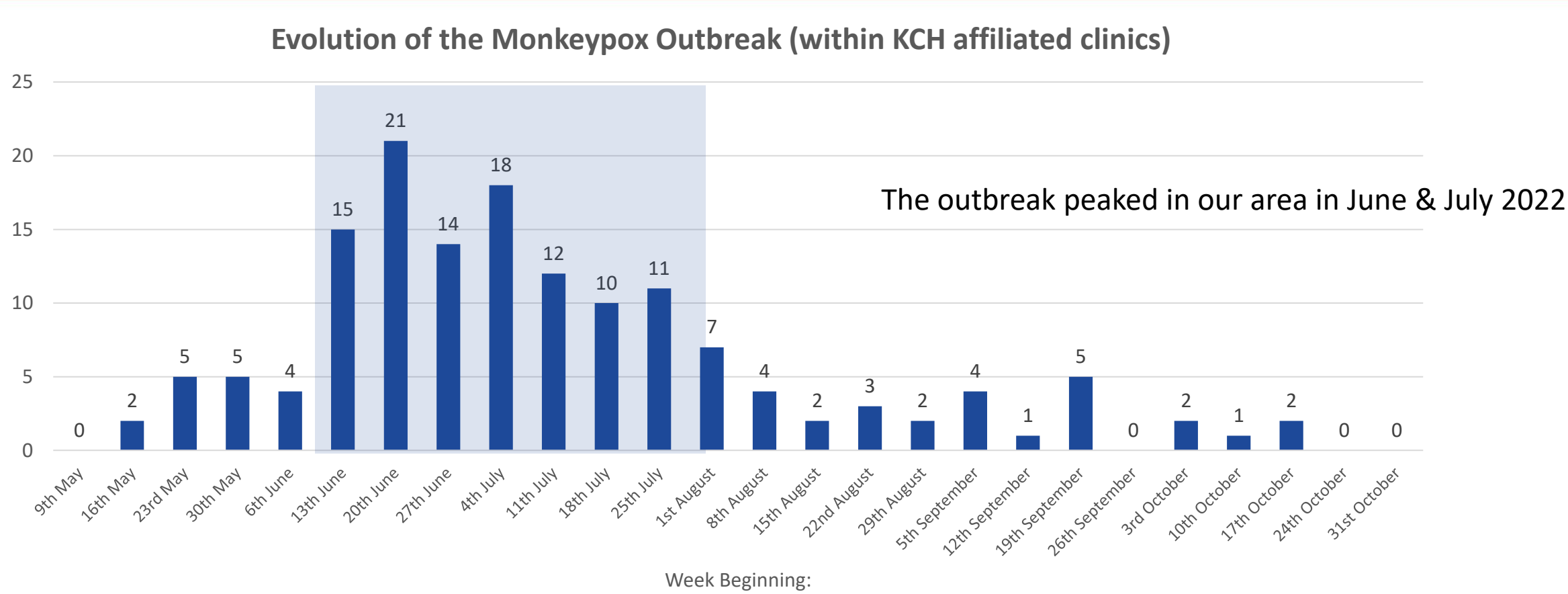
OUTPATIENT

VIRTUAL WARD



INPATIENT



The outbreak peaked in our area in June & July 2022

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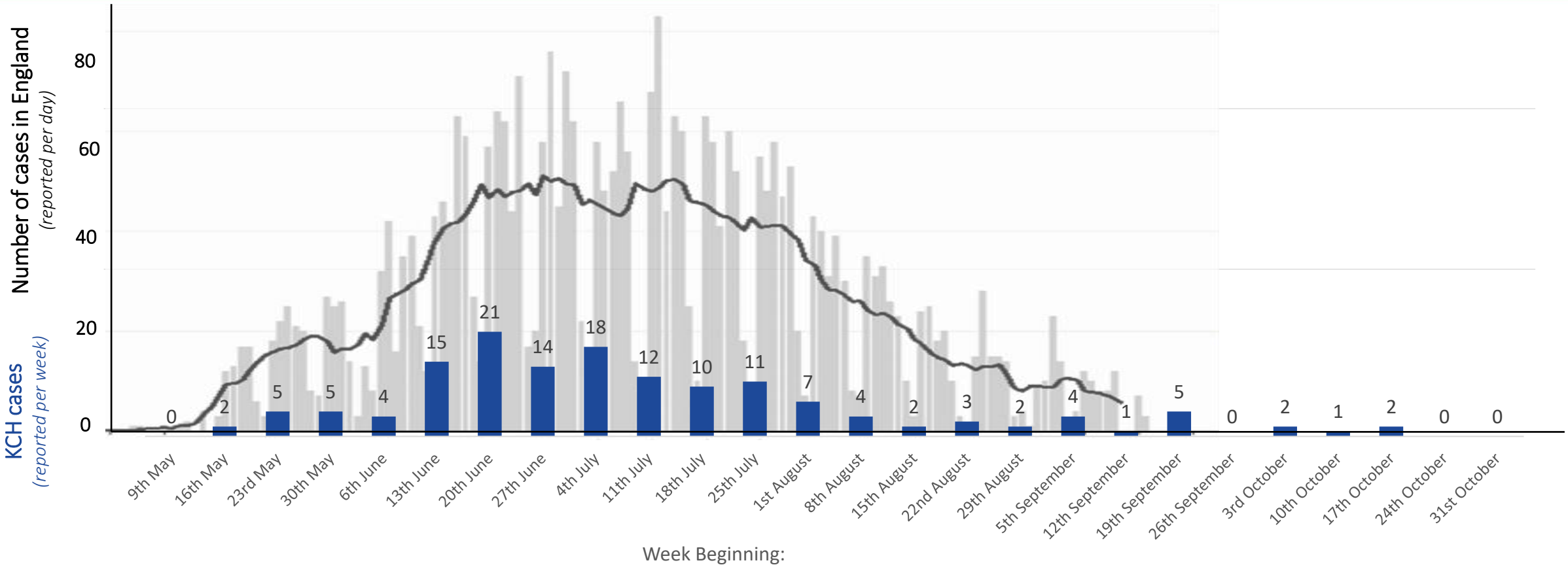
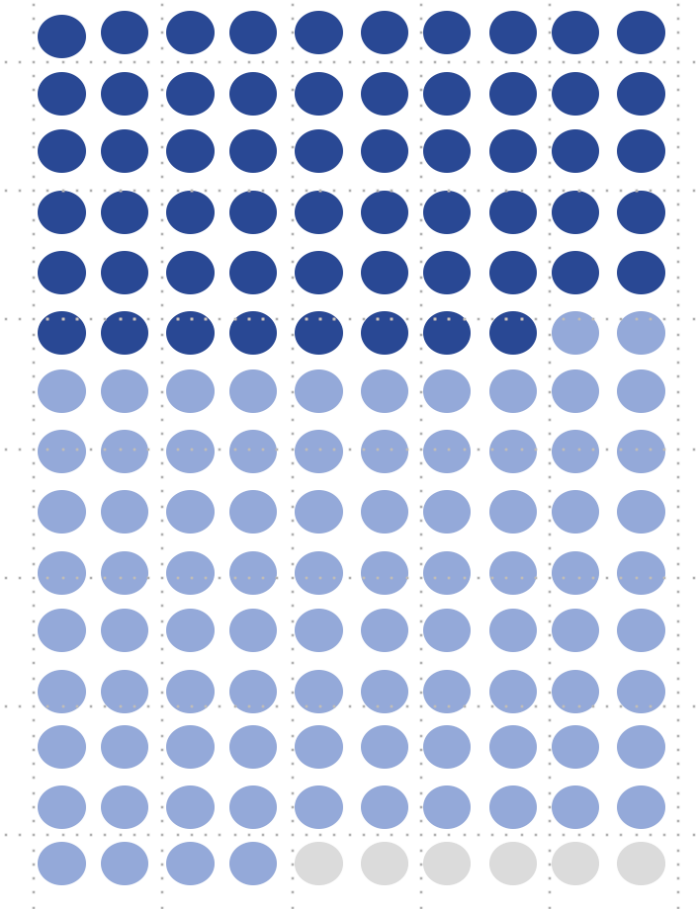


https://www.gov.uk/government/publications/monkeypox-outbreak-technical-briefings/investigation-into-monkeypox-outbreak-in-england-technical-briefing-6

RESULTS



150 cases of mpox were identified

HIV status was available for 144/150 individuals:

- 58 (38.7%) were HIV positive
- 86 (75.2%) were HIV negative
- 6 had unknown status

Most people had stable, well-controlled HIV

- 3/58 had CD4 cell counts <200 cells/mm^3
- 5/58 had HIV RNA >200 copies/mL

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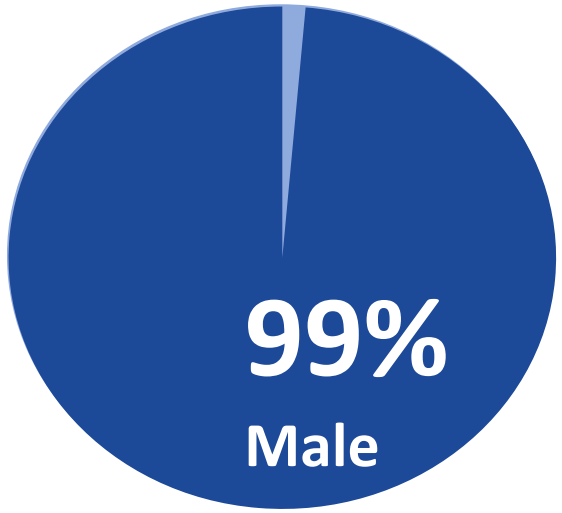
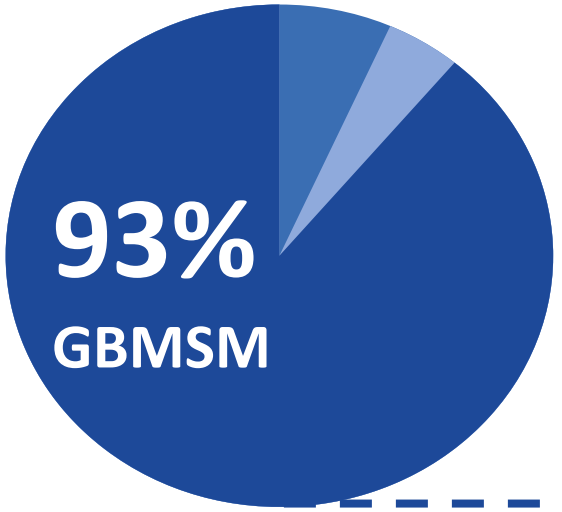
Demographic Variable	Whole Population (n=150)
Age (median, IQR)	
Age (years)	36 (IQR 30 to 43)
Sex (assigned at birth) (n, %)	
Male	149 (99.3%)
Female	1 (0.7%)
Gender Identity (n, %)	
Cis	149 (99.3%)
Trans	1 (0.7%)
Sexuality (n, %)	
GBMSM	139 (92.7%)
Heterosexual	7 (4.7%)
STI History (n, %)	
Known STI in last 12 months	41 (27.3%)



148 cis men
1 trans man
1 cis woman

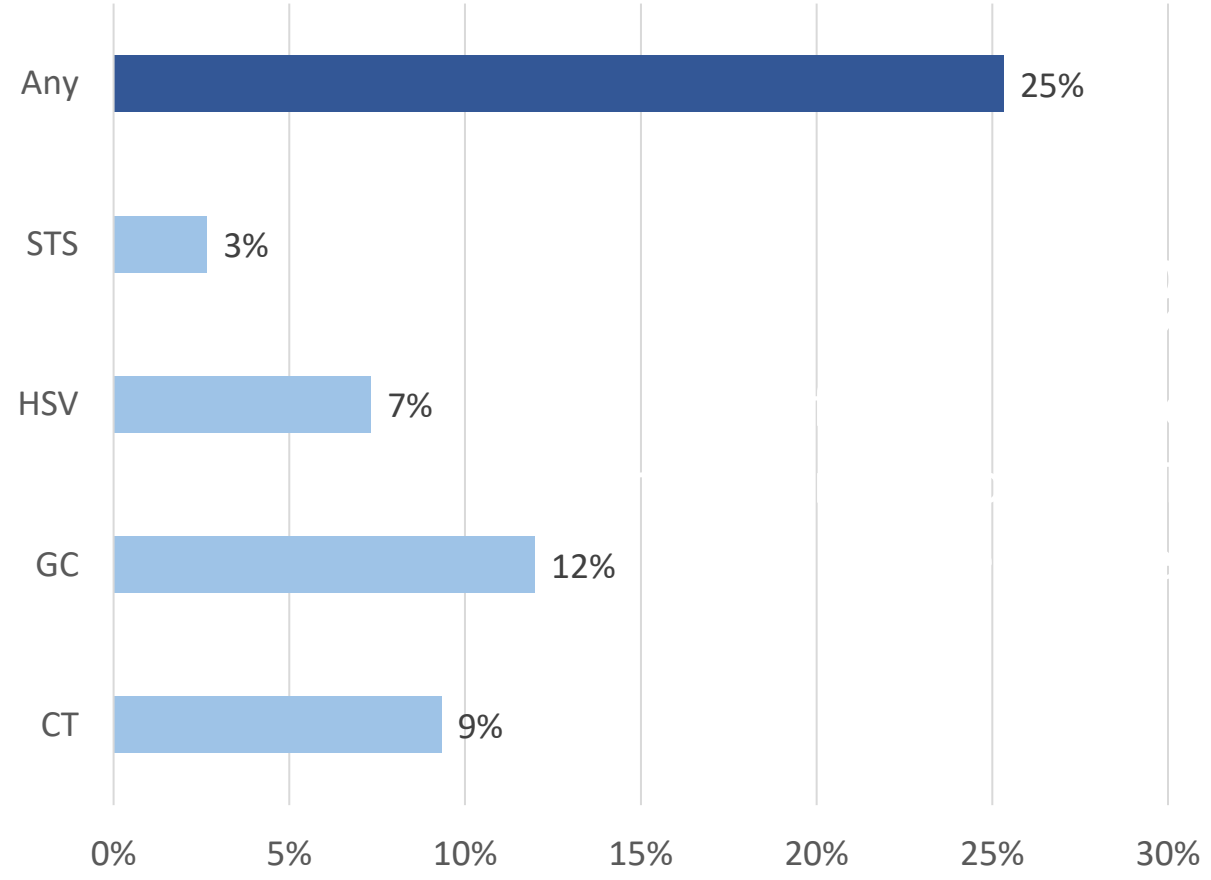
150
total cases



139 GBMSM
7 Heterosexual
4 Unknown

COMPARISON CHARACTERISTICS: HIV STATUS

Demographic Variable	Whole Population (n=150)	HIV Negative (n=86)	HIV Positive (n=58)	Comparison by HIV status
Age (median, IQR)				
Age (years)	36 (IQR 30 to 43)	34 (IQR 29 to 40)	41 (IQR 36 to 45)	**p = 0.0003***
Sex (assigned at birth) (n, %)				
Male	149 (99.3%)	85 (98.8%)	58 (100%)	p = 1.00
Female	1 (0.7%)	1 (1.2%)	0 (0.0%)	
Gender Identity (n, %)				
Cis	149 (99.3%)	86 (100%)	57 (98.3%)	p = 0.40
Trans	1 (0.7%)	0 (0.0%)	1 (1.7%)	
Sexual Orientation (n, %)				
GBMSM	139 (92.7%)	79 (91.7%)	56 (96.5%)	p = 0.40
Heterosexual	7 (4.7%)	5 (5.8%)	1 (1.7%)	
STI History (n, %)				
Known STI in last 12 months	41 (27.3%)	23 (26.7%)	18 (31.0%)	p = 0.58



Sexually transmitted infections

25.3% had at least one STI at the time of monkeypox diagnosis

There were **similar rates of STI co-infection** in both HIV positive and negative groups

There was **no evidence of concurrent STIs contributing to more severe outcomes**

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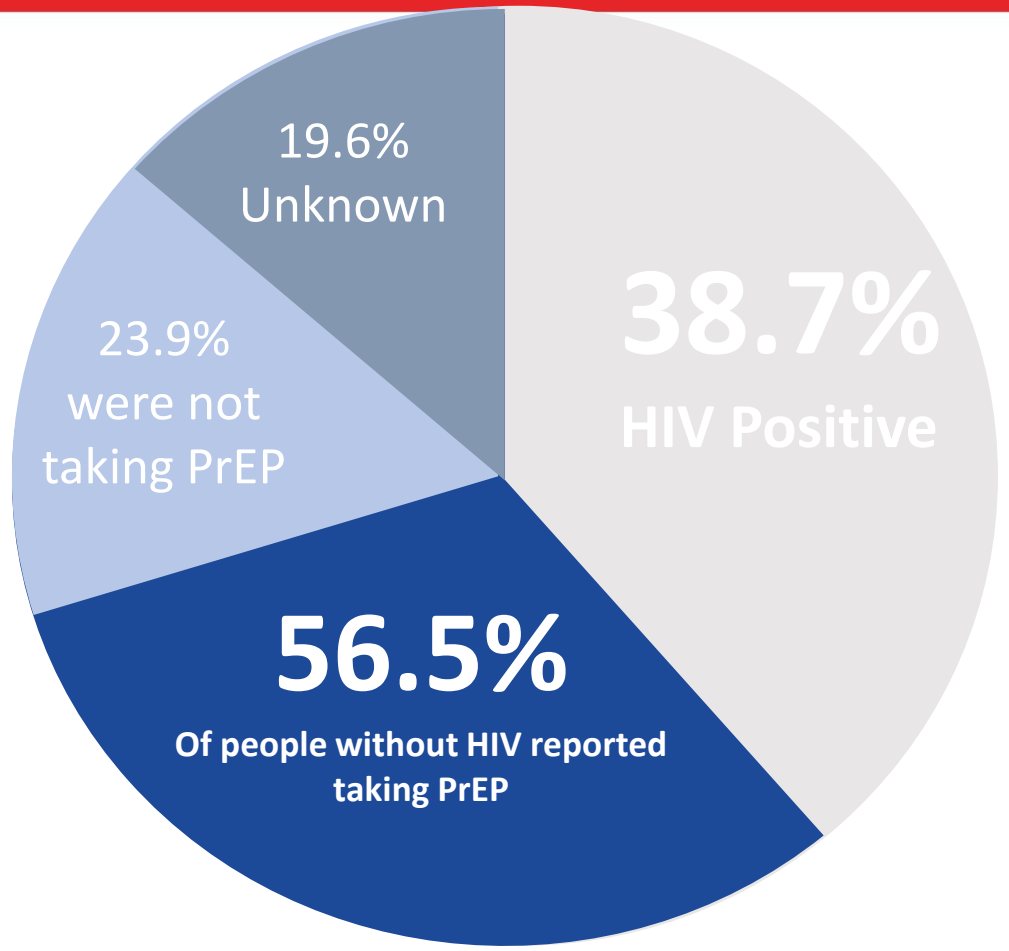


Of the people who were HIV negative, just **over half were taking PrEP**

SYMPTOMS

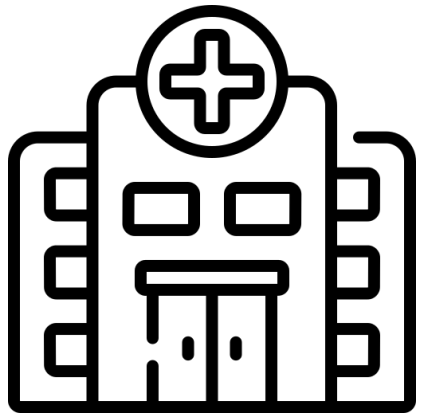
Reported Symptom	Whole Population (n=150)	HIV Negative (n=86)	HIV Positive (n=58)	Comparison of occurrence by HIV status
Systemic symptoms				
Any Systemic symptom	128/150 (85.3%)	71/86 (82.6%)	51/58 (87.9%)	RR 1.07 (0.93 to 1.22)
Systemic Prodrome	62/150 (41.3%)	31/86 (36.1%)	30/58 (51.72%)	RR 1.43 (0.99 to 2.09)
Sore Throat	25/150 (16.7%)	16/86 (18.6%)	7/58 (12.07%)	RR 0.65 (0.28 to 1.48)
Fever	94/150 (62.7%)	52/86 (60.5%)	38/58 (65.5%)	RR 1.08 (0.84 to 1.40)
Headache	26/150 (17.3%)	18/86 (20.9%)	7/58 (12.1%)	RR 0.58 (0.26 to 1.29)
Lymphadenopathy	79/150 (52.7%)	49/86 (57.0%)	27/58 (46.5%)	RR 0.82 (0.59 to 1.14)
Myalgia	34/150 (22.7%)	14/86 (16.3%)	16/58 (27.6%)	RR 1.69 (0.90 to 3.20)
Dermatological manifestations				
Genital Lesion(s)	88/150 (58.7%)	**58/86 (67.4%)**	**27/58 (46.5%)**	**RR 0.69 (0.51 to 0.94)**
Perianal Lesion(s)	39/150 (26.0%)	19/86 (22.1%)	19/58 (32.8%)	RR 1.48 (0.86 to 2.55)
Head/Neck/Face	48/150 (32.0%)	24/86 (27.9%)	23/58 (39.7%)	RR 1.42 (0.89 to 2.26)
Extra-Genital Lesions	103/150 (68.7%)	55/86 (64.0%)	43/58 (74.1%)	RR 1.16 (0.93 to 1.44)

OUTCOMES

Reasons for admission (n=19)

were similar for people with and without HIV:

- Pain (7/19)
- Upper respiratory tract involvement (5/19)
- Genital cellulitis (2/19)
- Non-genital cellulitis (3/19)
- Urinary retention (1/19)
- Abscess formation (1/19)



INPATIENT

No deaths
No life-threatening complications

Secondary bacterial infection occurred in a similar proportion of people with and without HIV (13.8% vs 13.9%).

OUTCOMES

Outcome (Indicator of Severity)	HIV Negative people (n=86)	HIV Positive people (n=58)	Measure of Association	Statistical Significance
Median time from symptoms onset to discharge from virtual follow up (days)	14 (IQR 11 to 18)	15 (IQR 9 to 18)	Z = 0.487	p = 0.63
Median time under virtual follow up (days)	8 (IQR 6.5 to 11.5)	8 (IQR 6 to 13)	Z = 0.145	p = 0.88
Requiring review in Emergency Department	22/86 (25.6%)	21/58 (36.2%)	Risk Ratio = 1.41 (95% CI 0.86 to 2.33)	p = 0.17
Admitted to hospital	8/86 (9.30%)	11/58 (19.0%)	Risk Ratio = 2.04 (95% CI 0.87 to 4.76)	p = 0.09

CONCLUSIONS

- In this cohort of people with mpox, there was a high proportion of well-controlled HIV co-infection

- We found no evidence that people with well-controlled HIV experienced more severe mpox infection.

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UK Health Security Agency

NHS

Mpox vaccination

Important **dates for your diary**

1st dose
Please come forward
by 16th June

2nd dose
Please complete your
dose **by 31st July**

Acknowledgements

Dr Vicki Pilkington

Dr Killian Quinn, Lucy Campbell, Prof. Frank Post

Microbiology and Virology colleagues at KCH

OUTCOMES

There were some in the cohort more at risk

- 3/58 had CD4 cell counts <200 cells/mm^3
- 5/58 had HIV RNA >200 copies/mL

LOW CD4 (+/- Viraemia)

CD4 <200
Undetectable
Admitted 2/7
Severe proctitis

CD4 <200
Viral load >100,000
LTFU

CD4 <50
Viral load >5,000
Admitted for 7/7
Orbital Cellulitis
Prolonged OP f/u

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OUTCOMES

VIRAEMIA (adequate CD4)

CD4 over 500
Viral load >50,000
Admitted for severe proctitis and urinary retention

CD4 over 500
Viral load >100,000
Mild, never admitted
Resolved with 9 days

CD4 over 500
Viral load just >200
Mild, never admitted
Symptoms to dc = 17 days

LOW CD4 (+/- Viraemia)

CD4 <200
Undetectable
Admitted 2/7
Severe proctitis

CD4 <200
Viral load >100,000
LTFU

CD4 <50
Viral load >5,000
Admitted for 7/7
Orbital Cellulitis