THPEC218

Doxycycline for Bacterial Sexually Transmitted Infection Prevention in British Columbia, Canada

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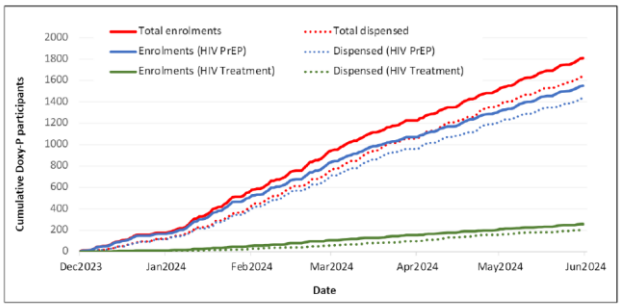
BC-CfE Doxy-P Initiative Enrolment (1-Dec-2023 to 31-May-2024)



1813 persons enrolled in the first 6 months (86% HIV PrEP, 14% HIV Treatment), with 39.4% identifying as White, 12.5% Latin American, 10.8% East Asian, 5.7% South Asian, 4.4% Southeast Asian, 1.9% Black, 25.6% Other, and 82.2% residing in the Greater Vancouver Area. Additional participant characteristics by program are shown in the table.

Characteristics of Doxy-P enrollees (1-Dec-2023 to 31-May-2024)

	Total N= 1813	HIV PrEP n=1555	HIV Treatment n=258
Median age (Q1-Q3)	35 (31-43)	35 (30-42)	37 (32-49)
Key populations, n (%)			
gbMSM	1783 (98.3)	1532 (98.5)	251 (97.3)
TGW	<10 (<0.5)	<10 (<0.6)	<5 (<2.0)
Other	<5 (<0.2)	<5 (<0.3)	<5 (<2.0)
B-STI in prior year	931 (51.3)	780 (50.2)	151 (58.5)
Prior Doxy-P**	504 (27.8)	444 (28.5)	60 (23.2)
Baseline syphilis rates***			
Syphilis testing, per PY	3.77	3.81	3.59
Syphilis incidence, per 100 PY	7.86	6.66	13.20

gbMSM, Gay, bisexual and other men who have sex with men; TGW, Transgender women; b-STI, bacterial sexually transmitted infection; PY, person years.**Prior to enrolling into BC-CfE Doxy-P initiative. ***Prior to December 1, 2023 (launch of initiative).

Of 1813 enrollees, Doxy-P dispensation was confirmed in 1715 (95%). Median (Q1-Q3) time from baseline syphilis test to first doxy-P dispensing was 15 (9-28) days, and the median follow-up time after first dispense was 109 (66-148) days. 1084 of the 1715 participants had at least one follow-up syphilis test at median 75 (51-85) days. Fewer than 5 incident cases of syphilis were observed in the follow-up period.

Kaiser Permanente

- Among 11551 HIV PrEP users in this system followed between November 2022-December 2023, 2253 (19.5%) initiated doxyPEP

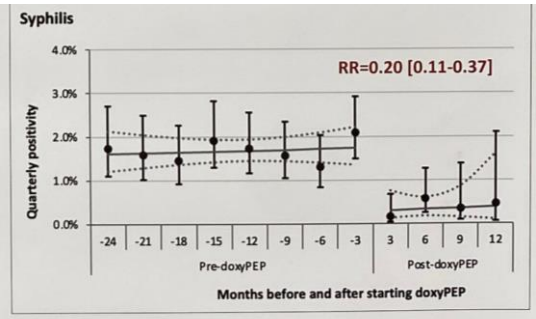
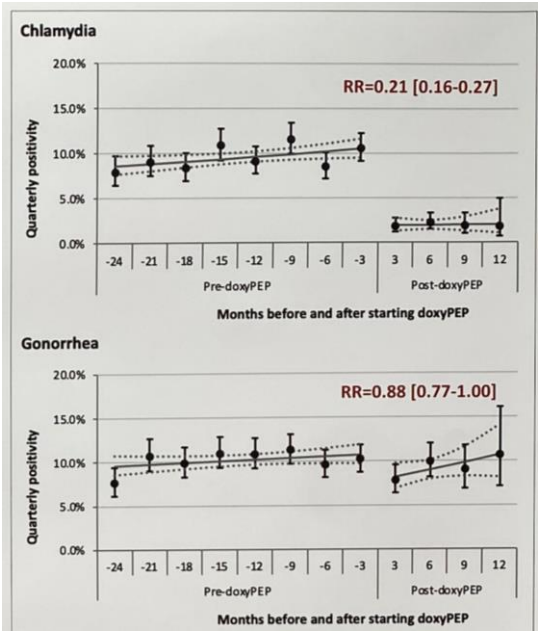
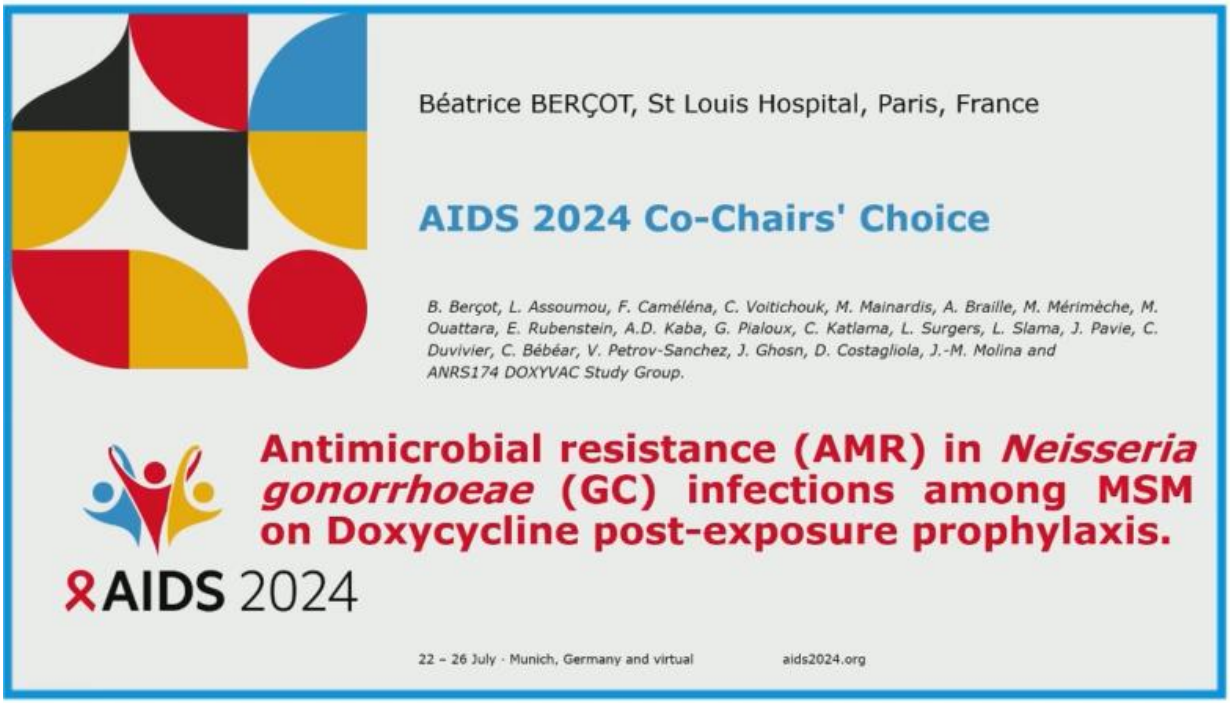


Figure. Quarterly STI positivity from 24 months before starting doxyPEP to 12 months after starting doxyPEP among all HIV PrEP users dispensed doxyPEP at least once (n=2,253). RR=rate ratio

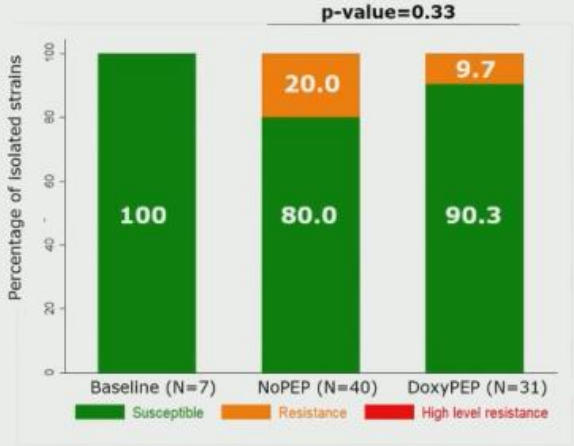


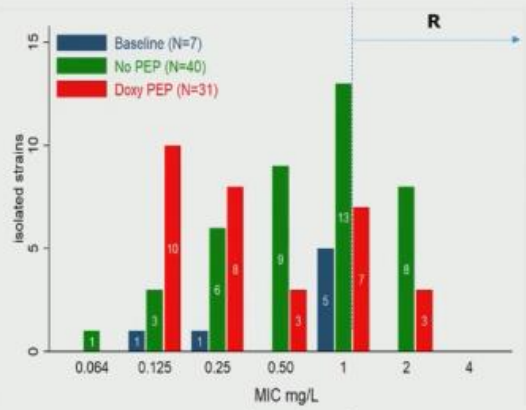


Resistance to Azithromycin, MIC distribution

78 GC isolates

Similar distribution of MICs in both arms



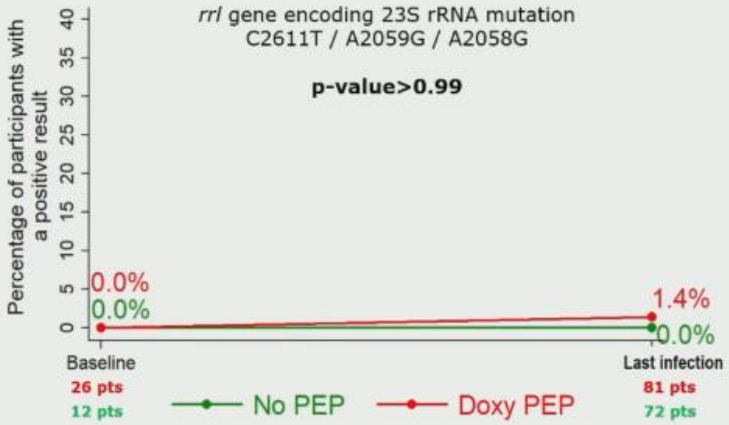


Resistance MIC > 1 mg/L, High Level Resistance MIC > 4 mg/L
www.eucast.org/clinical_breakpoints/

Resistance to Azithromycin, molecular determinants

N= 175 GC infections (baseline and last GC infections)

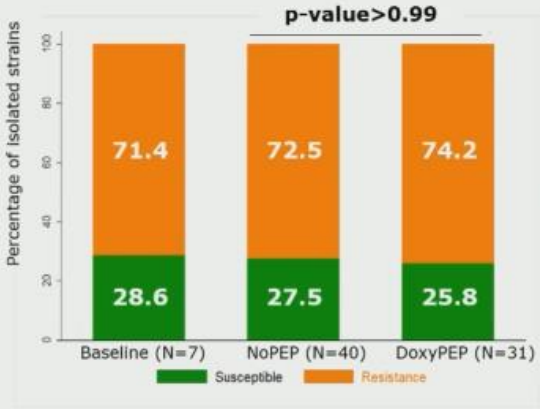
No significant difference between arms in slope of rRNA 23S mutation.

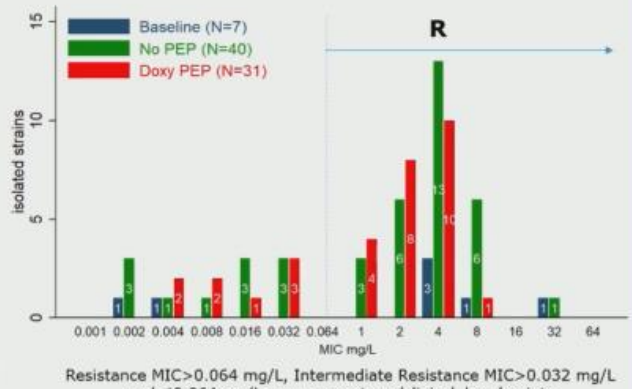


Resistance to Ciprofloxacin, MIC distribution

78 GC isolates

High resistance to ciprofloxacin in both study arms
Similar distribution of MICs in both arms



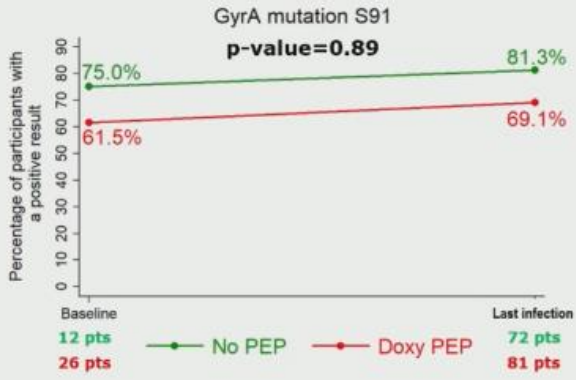


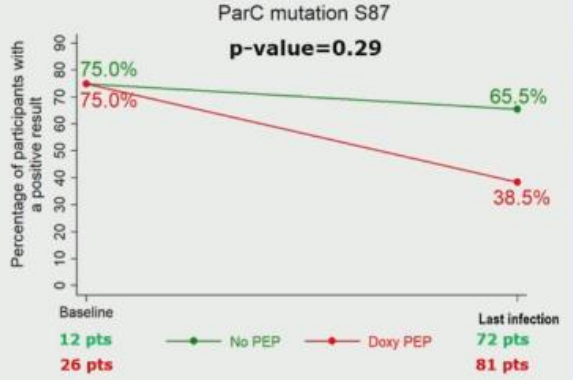
Resistance MIC>0.064 mg/L, Intermediate Resistance MIC>0.032 mg/L and ≤0.064 mg/L; www.eucast.org/clinical_breakpoints

Resistance to Ciprofloxacin, molecular determinants

N= 175 GC infections (baseline and last GC infections)

No significant difference between arms in slope of GyrA and ParC mutations detection.

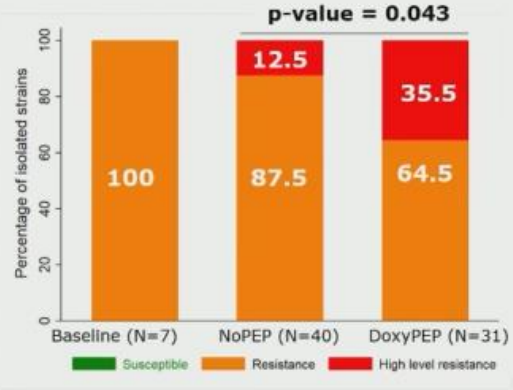


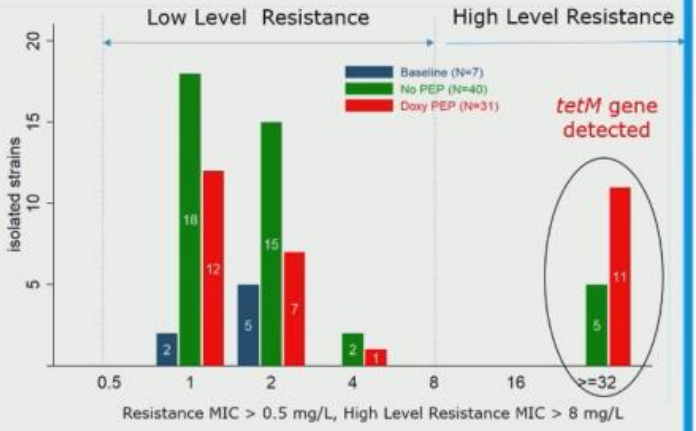


Resistance to tetracycline, MIC distribution

78 GC isolates

More high-level tetracycline-resistant isolates in the DoxyPEP arm



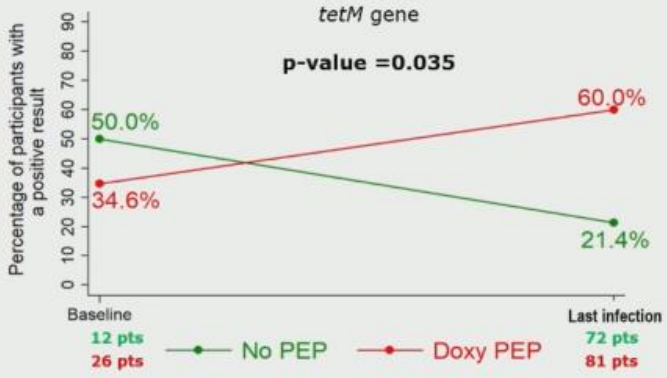


Molina *et al*, Lancet Inf Dis, 2024 May 23:S1473-3099(24)00236-6; www.eucast.org/clinical_breakpoints/

Resistance to tetracycline, molecular determinants

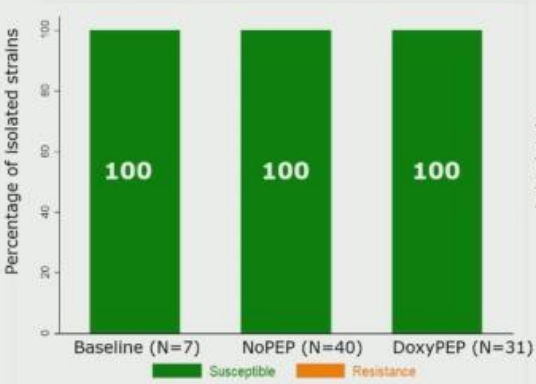
N= 175 GC infections (baseline and last GC infections)

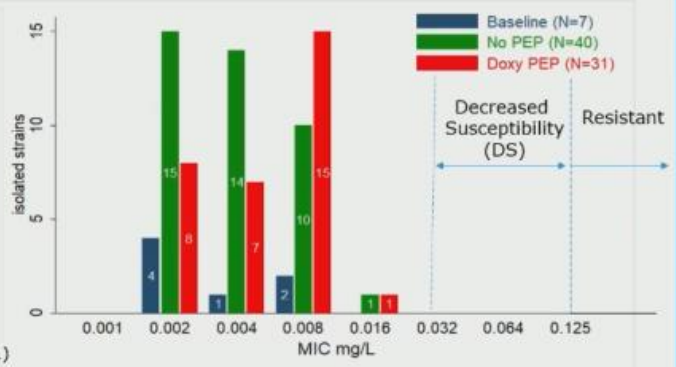
Significant difference between arms in slope of *tetM* gene detection.



Susceptibility to ceftriaxone, MIC distribution

78 GC isolates
All GC isolates were fully susceptible to ceftriaxone



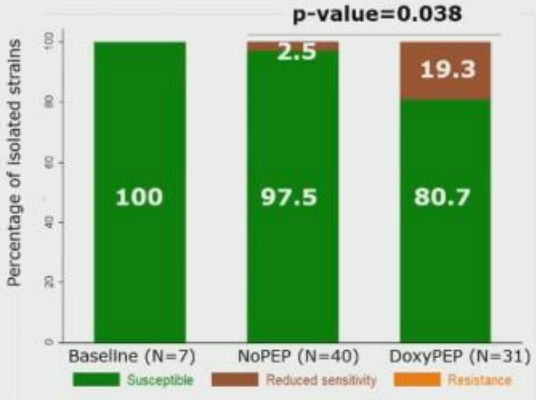


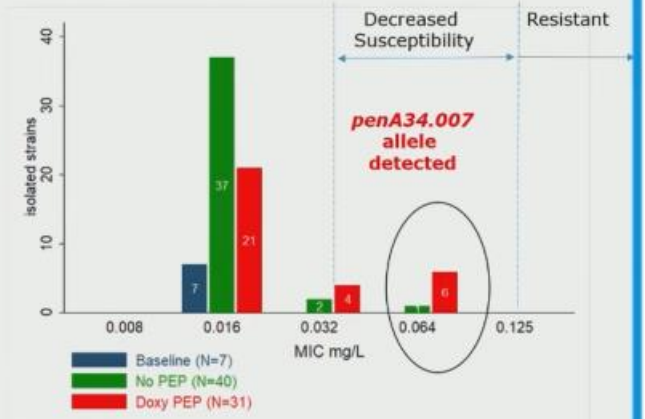
Resistance: MIC>0.125 mg/L, Decreased Susceptibility 0.125≤MIC>0.032 mg/L

www.eucast.org/clinical_breakpoints/; www.who.int/publications/i/item/9789240090767

Decreased susceptibility to cefixime, MIC distribution

78 GC isolates
Isolates with Decreased Susceptibility to cefixime were more frequent in the doxyPEP arm.





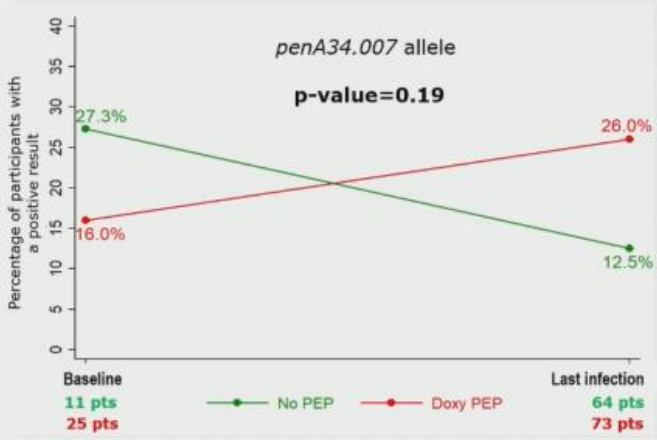
Resistance: MIC>0.125 mg/L, Decreased susceptibility 0.125≤MIC>0.032 mg/L

www.eucast.org/clinical_breakpoints/; www.who.int/publications/i/item/9789240090767

Decreased susceptibility to cefixime, molecular determinants

N= 173 GC infections (baseline and last GC infections)

No significant difference between arms in slope of *penA34.007* allele detection.



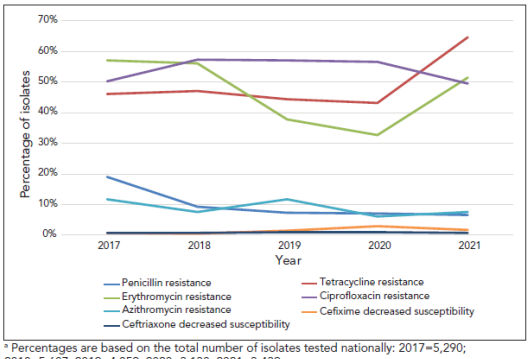
22 – 26 July · Munich, Germany and virtual aids2024.org

SURVEILLANCE

Antimicrobial susceptibilities of *Neisseria gonorrhoeae* in Canada, 2021

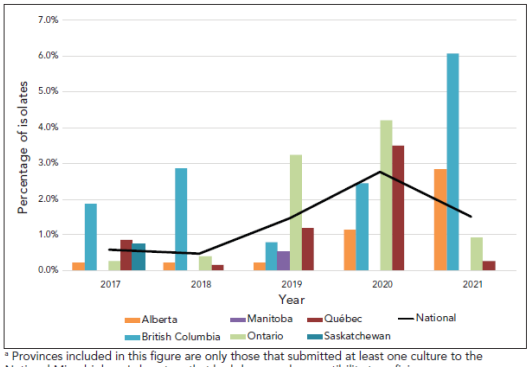
Pamela Sawatzky[1], Brigitte Lefebvre[2], Mathew Diggle[3], Linda Hoang[4], Jason Wong[4], Samir Patel[5], Paul Van Caessele[6], Jessica Minion[7], Richard Garceau[8], Sarah Jeffrey[9], David Haldane[10], Lillian Lourenco[11], Genevieve Gravel[11], Michael Mulvey[1], Irene Martin[1]*

Figure 6: Percentage of antimicrobial resistance of *Neisseria gonorrhoeae* isolates tested in Canada, 2017–2021[a,b]



[a] Percentages are based on the total number of isolates tested nationally: 2017=5,290; 2018=5,607; 2019=4,859; 2020=3,130; 2021=3,439
[b] Due to some provinces not testing all seven antimicrobials from 2017 to 2021, penicillin denominators were 3,267, 3,883, 3,822, 2,409 and 2,334, respectively; erythromycin denominators were 2,879, 3,418, 3,446, 2,025 and 2,006, respectively. In 2020 and 2021, tetracycline denominators were 2,409 and 2,334, respectively

Figure 2: Percentage of *Neisseria gonorrhoeae* cultures with decreased susceptibility to cefixime by province, 2017–2021[a,b]



[a] Provinces included in this figure are only those that submitted at least one culture to the National Microbiology Laboratory that had decreased susceptibility to cefixime
[b] Denominators used for the calculations of the percentages are the number of cultures tested in each province (**Table S4**)

CCDR 2023;49:388

A pilot, randomized controlled trial of doxycycline pre-exposure prophylaxis versus placebo for prevention of bacterial sexually transmitted infections in men who have sex with men living with HIV

Troy Grennan[1-3], Darrell H.S. Tan[3-5], Saira Mohammed[6], Ramin Azmin[1], Ann N. Burchell[3-5], Adam D. Burgener[7], Bill Cameron[8], Joshua Edward[9], Terry Lee[3], David Moore[2, 3, 6], Muhammed Morshed[1,2], Reva Persaud[4], Marc G. Romney[2,10], Joel Singer[2,3], Jason Wong[1,2], Mark W. Hull[2,3,6]

[1]BC Centre for Disease Control, Vancouver, Canada; [2]University of British Columbia, Vancouver, Canada; [3]CIHR Canadian HIV Trials Network, Vancouver, Canada; [4]Unity Health Toronto, Toronto, Canada; [5]University of Toronto, Toronto, Canada; [6]BC Centre for Excellence in HIV/AIDS, Vancouver, Canada; [7]Case Western Reserve University, Cleveland, United States; [8]Ottawa Hospital Research Institute, Ottawa, Canada; [9]Nova Scotia Health, Halifax, Canada; [10]St. Paul's Hospital, Vancouver, Canada.

	Total STIs per arm		Incidence rate (95% CI), per 100 PY		Rate ratio* (95% CI)	p
	DoxyPrEP	Placebo	DoxyPrEP	Placebo		
Syphilis	1	5	3.95 (0.96, 16.28)	19.26 (10.23, 36.28)	0.21 (0.04, 0.97)	**0.04**
Chlamydia	1	13	3.97 (0.69, 22.77)	50.09 (30.86, 81.30)	0.08 (0.01, 0.49)	**0.01**
Gonorrhea	4	13	15.88 (6.61, 38.15)	50.09 (30.81, 81.44)	0.32 (0.12, 0.86)	**0.02**
TOTAL	6	31	23.71 (9.93, 56.66)	119.44 (81.42, 175.20)	0.20 (0.08, 0.51)	**<0.001**

Abbreviations: CI, confidence interval; doxyPrEP, doxycycline pre-exposure prophylaxis; PY, person-years; STI, sexually transmitted infection. ***Rate ratio <1** suggests lower incidence rate in doxycycline arm.

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RETHINKING STI PREVENTION

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The Way We Think About STI Prevention & Treatment Is Changing

Infection rates for bacterial sexually transmitted diseases (STIs) like syphilis, chlamydia and gonorrhea are on the rise, and gay, bisexual, and other men who have sex with men and transgender women are being disproportionately affected.

The waning effectiveness of conventional STI prevention tools like condoms and the potential development of serious complications from these STIs signals the need for new STI prevention

Currently enrolling at SMH!

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Stanley.onyegbule@unityhealth.to

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Doxycycline Prophylaxis to Prevent Sexually Transmitted Infections in Women

Jenell Stewart, D.O., M.P.H., Kevin Oware, M.A., Deborah Donnell, Ph.D., Lauren R. Violette, M.P.H., Josephine Odoyo, R.N., M.P.H., Olusegun O. Soge, Ph.D., Caitlin W. Scoville, M.P.H., Victor Omollo, M.B., Ch.B., M.P.H., Felix O. Mogaka, M.B., Ch.B., Fredericka A. Sesay, M.B., Ch.B., M.P.H., R. Scott McClelland, M.D., M.P.H., Matthew Spinelli, M.D., M.P.H., Monica Gandhi, M.D., M.P.H., Elizabeth A. Bukusi, M.B., Ch.B., M.Med., M.P.H., Ph.D., and Jared M. Baeten, M.D., Ph.D., for the dPEP Kenya Study Team*

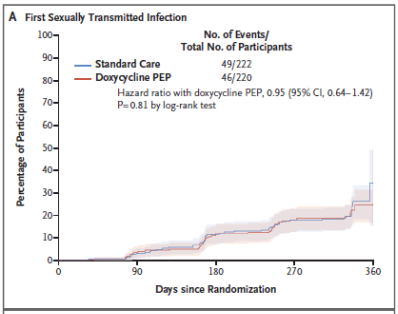


Figure 2. Time to the First Sexually Transmitted Infection and the First *Chlamydia trachomatis* Infection.

AIDS 2024

Characteristics of the dPEP Trial qualitative IDI sample (N=40)

Characteristics	N = 40 (%)
Age	
Median [IQR]	**24.2 [22.4-27.9]**
18-25	**24 (60.0%)**
26-30	16 (40.0%)
Marital status	
Never married	**34 (85.0%)**
Married	2 (5.0%)
Separated	3 (7.5%)
Divorced	1 (2.5%)
Living with a primary partner	
Yes	3 (7.5%)
No	**36 (90.0%)**
Does not have a partner	1 (2.5%)

Characteristics	N = 40 (%)
Highest level of education	
Primary school, not complete	2 (5.0%)
Primary school, complete	5 (12.5%)
Secondary school, not complete	5 (12.5%)
Secondary school, complete	18 (45.0%)
Attended post-secondary school	10 (25.0%)
Employment status	
Does not have an income of her own	15 (37.5%)
Informal sector employment	24 (60.0%)
Other	1 (2.5%)
Engages in transactional sex	
Yes	**24 (60.0%)**
No	16 (40.0%)

AIDS 2024

Results Summary

Key barriers remained, but their emphasis shifted over time.

We observed consistent themes, though their prominence varied at different stages

Early experiences

Side Effects

Stigma and privacy concerns

Partner influence and reactions
Forgetfulness and Routine disruptions
Logistical challenges and pill management

Month 6

Stigma and privacy concerns

Forgetfulness

Side effects
Partner Influence
Logistical challenges

Month 12

Forgetfulness

Side effects

Stigma and privacy concerns
Lake of immediate perceived benefits
Logistical concerns

FGDs after study exit

Side effects

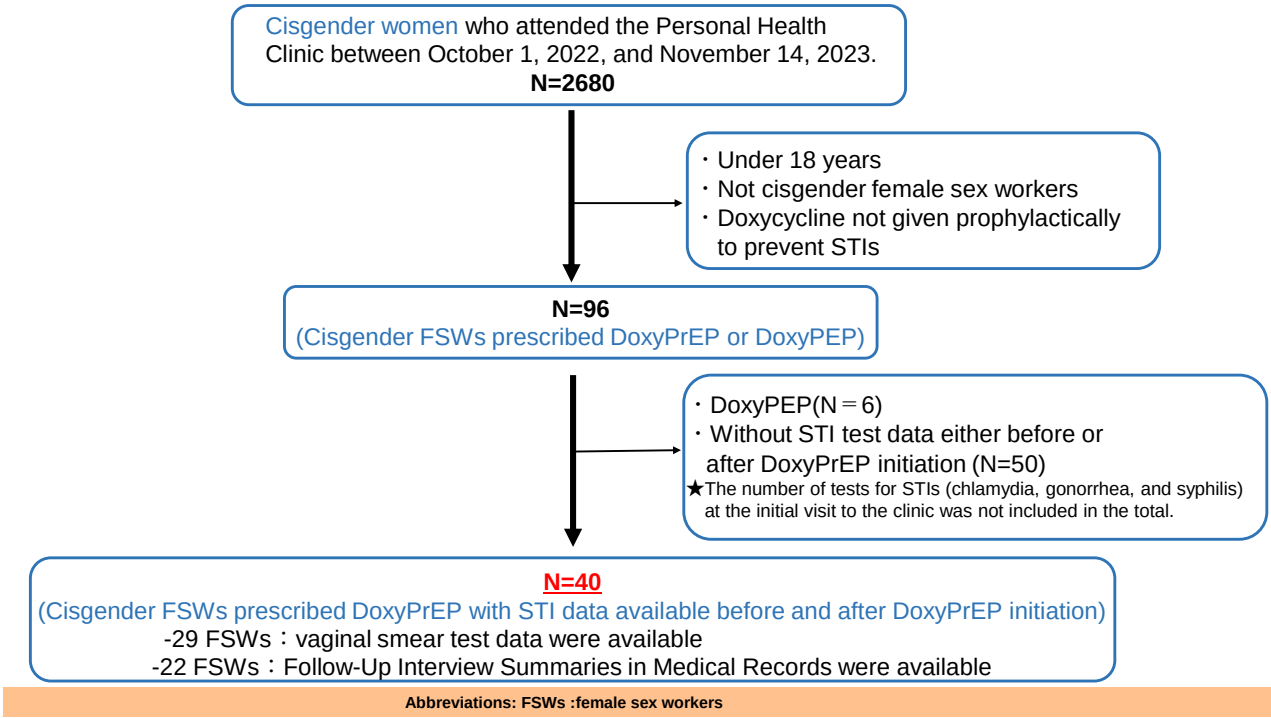
Stigma and social perception

Inconvenient dosing schedule
Misconceptions and lack of knowledge
Peer influence and social dynamics

Doxycycline PrEP Prevents STIs Without Affecting Vaginal Bacterial Flora in Female Sex Workers

S.Abe[1] , D.Shiojiri[2], A.Kawashima[1], H.Uemura[1], N.Ando[1], D.Mizushima[1], H.Gatanaga[1] and S.Oka[1]
[1]AIDS Clinical Center, National Center for Global Health and Medicine, Tokyo, Japan
[2]Personal Health Clinic, Tokyo, Japan

I have no relevant financial relationships with ineligible companies to disclose.



Result① Baseline characteristics

	N=40
Age(yrs), med [IQR]	**29[26.0-33.5]**
18-29, N (%)	**22(55.0)**
30-39, N (%)	**15(37.5)**
40+, N (%)	**3(7.5)**
Race	
Asian, N (%)	**40(100)**
HIV-PrEP, N (%)	**33(82.5)**
Contraceptive pill, N (%)	**35(87.5)**

	N=40
Prevalence at first visit	
Chlamydia, N (%)	**7(17.5)**
Gonorrhea, N (%)	**6(15.0)**
Syphilis(active) , N (%)	**0(0)**
Syphilis(prehistory) , N (%)	**2(5.0)**
BV, N (%) (※N=14)	**8(57.1)**
VVC, N (%) (※N=14)	**0(0)**
HIV infection, N (%)	**0(0)**
active HBV infection, N (%)	**0(0)**
Total observation period(Person-Years)	**69.2**
＊Total number of STI tests	**1757**
＊Total number of STI tests/Person-Years	**25.4**

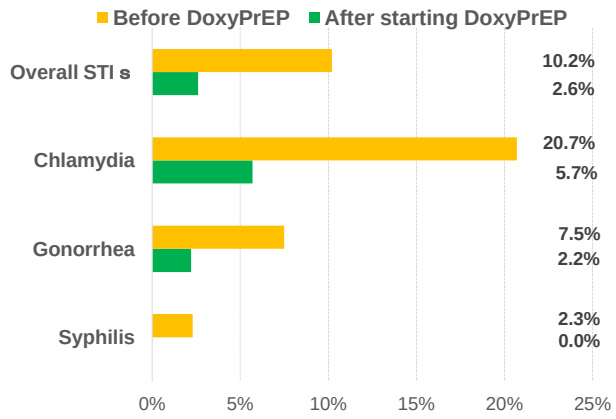
＊If multiple sites were tested simultaneously, each test was counted separately.
Vaginal smears were not included in the counts of STI tests.

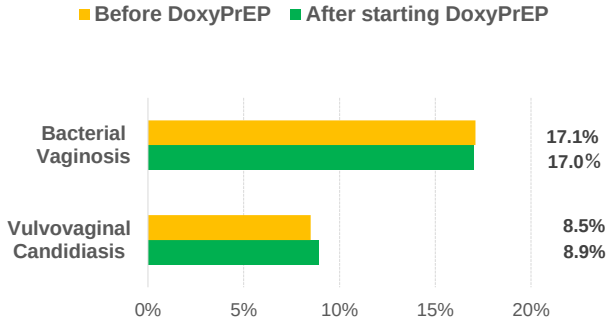
Result②：Incidence for each Infection Before and After Starting DoxyPrEP

	Before DoxyPrEP			After starting DoxyPrEP			
	Number of Diagnosis	PYs	IR (/100 PYs)	Number of Diagnosis	PYs	IR (/100 PYs)	IRR(95%CI)
Overall STIs (N=40)	108	46.5	232.3	18	22.7	79.2	0.33(0.13-0.84) p=0.020
Chlamydia (N=40)	74	46.5	159.2	13	22.7	57.2	0.35(0.12-1.03) p=0.056
Gonorrhea (N=40)	26	46.5	55.9	5	22.7	22.0	0.45(0.15-1.29) p=0.136
Syphilis (N=40)	8	46.5	17.2	0	22.7	0	—
Bacterial Vaginosis(N=27)	36	34.2	105.2	23	16.7	137.7	1.19(0.72-1.94) p=0.499
Vulvovaginal candidiasis(N=27)	18	34.2	52.6	12	16.7	71.8	1.52(0.62-3.70) p=0.358

Abbreviations: PYs：Person-Years, IR：Incidence Rates, IRR：Incidence Rate Ratio, 95% CI: 95% Confidence Interval

Result③：Test positivity rate(Incidence/number of tests)





STIs	Number of Tests		Number of Tests/PYs	
	Before	After	Before	After
Overall STIs	1055	702	22.7	30.9
Chlamydia	358	230	7.7	10.1
Gonorrhea	348	231	7.5	10.2
Syphilis	349	241	7.5	10.6

	Number of Tests		Number of Tests/PYs	
	Before	After	Before	After
Bacterial Vaginosis	211	135	6.2	8.1
Vulvovaginal Candidiasis	211	135	6.2	8.1

Abbreviations: RR: Risk Ratio, PYs: Person-Years

Result④ : Follow-Up Interview Summaries in Medical Records

Response(N=22)	Count	%
Adherence to DoxyPrEP		
No missed doses(100%)	16	72.7
Missed doses 1-2 times/month	6	27.3
Missed doses >3 times/month	0	0
Side Effect *		
Nausea and vomiting	5	22.7
Diarrhea	1	5.0
Genital itching	3	13.6
Condom Use Frequency		
No change	21	95.5
Increase	1	4.5
Decrease	0	0
Benefits and Concerns *		
Reduction in anxiety about STIs	16	72.7
Reduction in the incidence of STIs	16	72.7
Decrease in days off from sex work	7	31.8
Cost	8	36.4

∗ Multiple answers allowed

Get involved!

- IAS+ platform
- CIPHER grants on pediatric HIV in LMICs
- Webinars: Heart of Stigma, Vaccines, mpox…
- Mentorship program
- Abstract reviews