



INSTITUTE
OF TROPICAL
MEDICINE
ANTWERP

En pratique en Belgique

Thibaut Vanbaelen MD PhD



Introduction

- Pratiques belges en matière de
 - Dépistage Ng/Ct
 - DoxyPEP
 - Vaccination contre les méningocoques



Introduction

- Pratiques belges en matière de
 - ~~Dépistage Ng/Ct NON~~
 - ~~DoxyPEP NON~~
 - ~~Vaccination contre les méningocoques NON~~



Introduction

- Pratiques belges en matière de
 - ~~Dépistage Ng/Ct NON mais...~~
 - ~~DoxyPEP NON mais...~~
 - ~~Vaccination contre les méningocoques NON mais...~~



Introduction

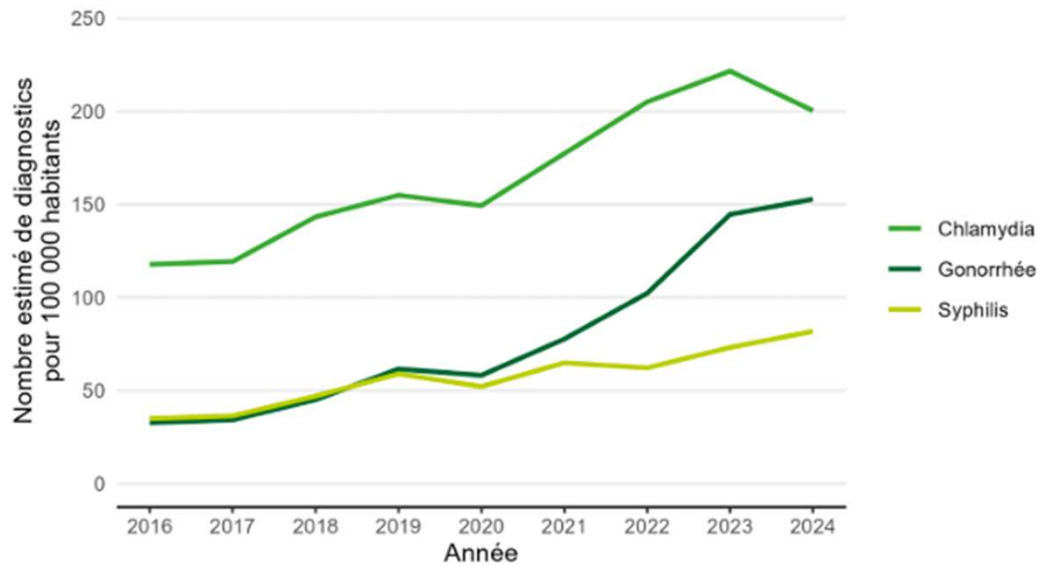


Figure 1 : Evolution du nombre estimé de diagnostics de chlamydia, de gonorrhée et de syphilis pour 100 000 habitants, Belgique, 2016-2024

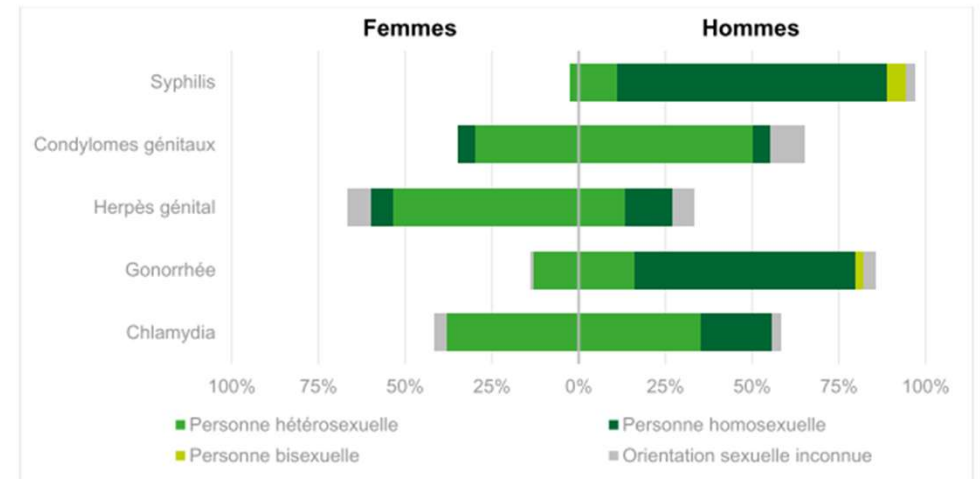


Figure 28 • Répartition proportionnelle de l'orientation sexuelle par IST et par sexe Belgique, 2022-2023

Source : Réseau de médecins généralistes vigies

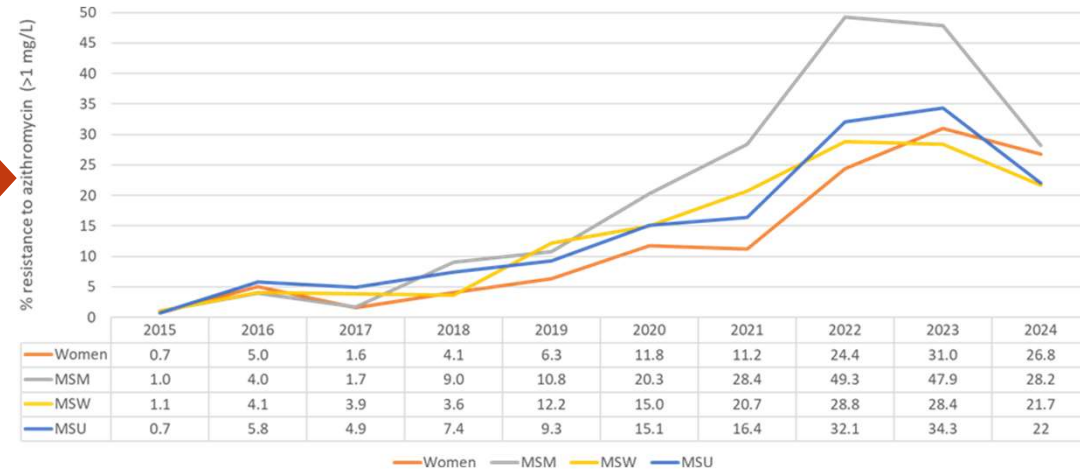
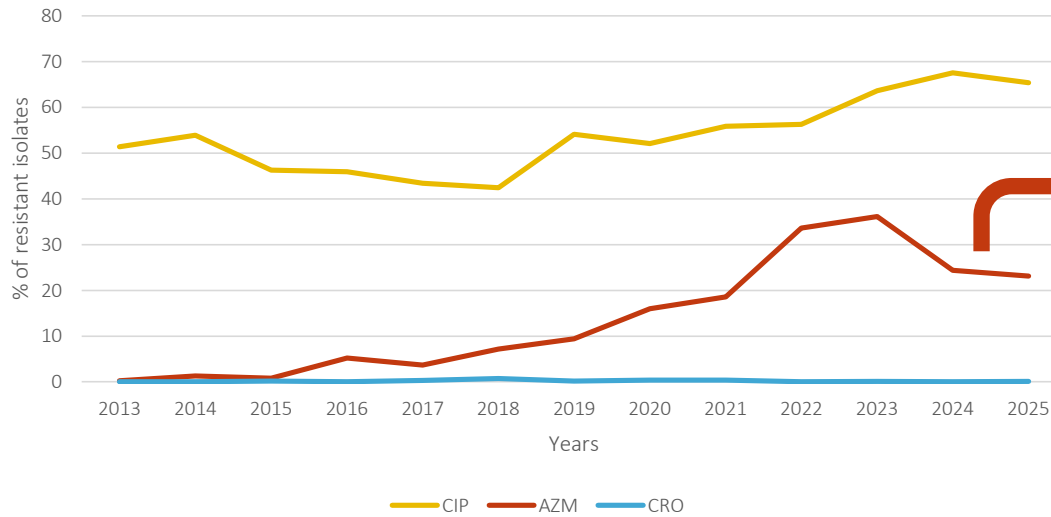
Note : Cette figure montre par IST la distribution proportionnelle du sexe et de l'orientation sexuelle. Il convient donc d'être prudent lors des comparaisons entre les différentes IST, car les totaux peuvent varier considérablement.

Lecompte, A., et al. (2024). Brussels, Sciensano.



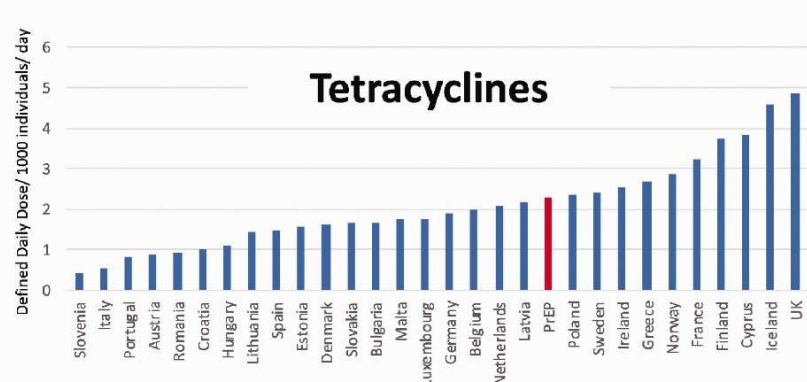
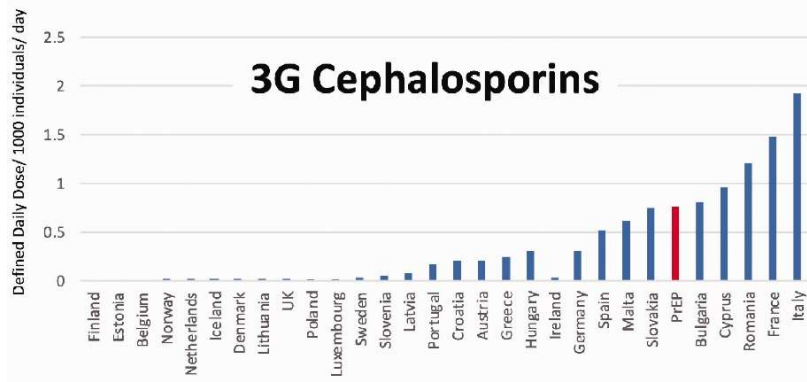
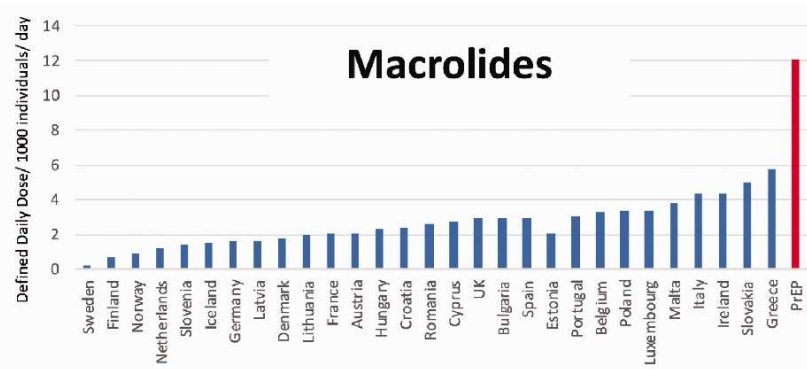
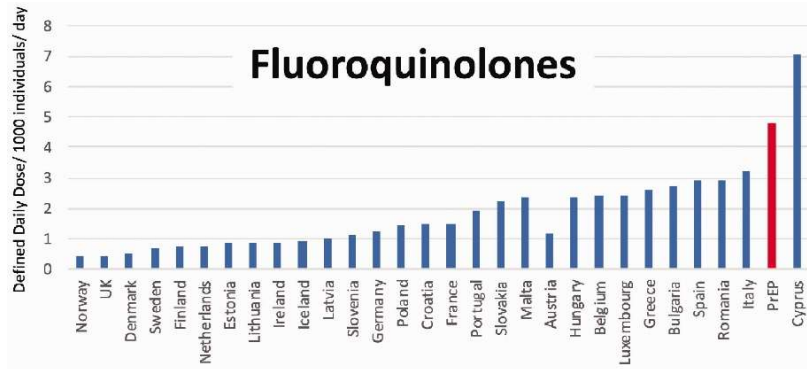
Introduction

N. gonorrhoeae resistance to AZM, CIP, CRO in Belgium



Lecompte, A., et al. (2024). Brussels, Sciensano; De Baetselier, I, et al. (2024), Antwerp, NRC-STI.

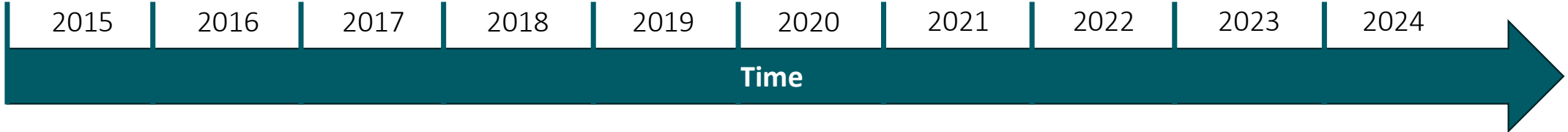


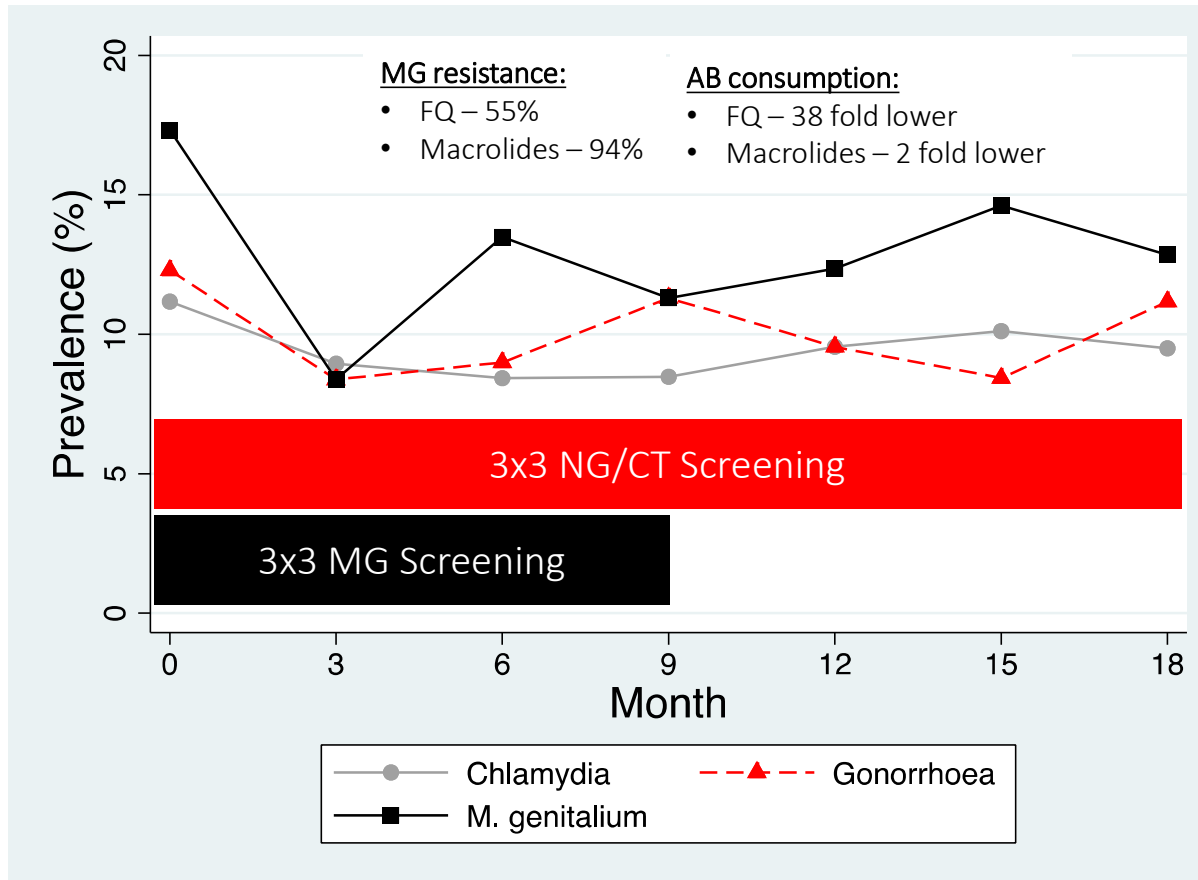


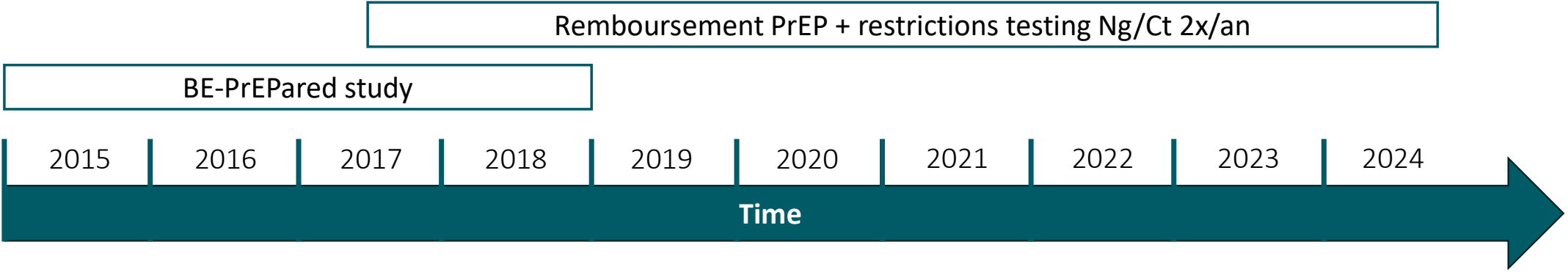
Dépistage Ng/Ct



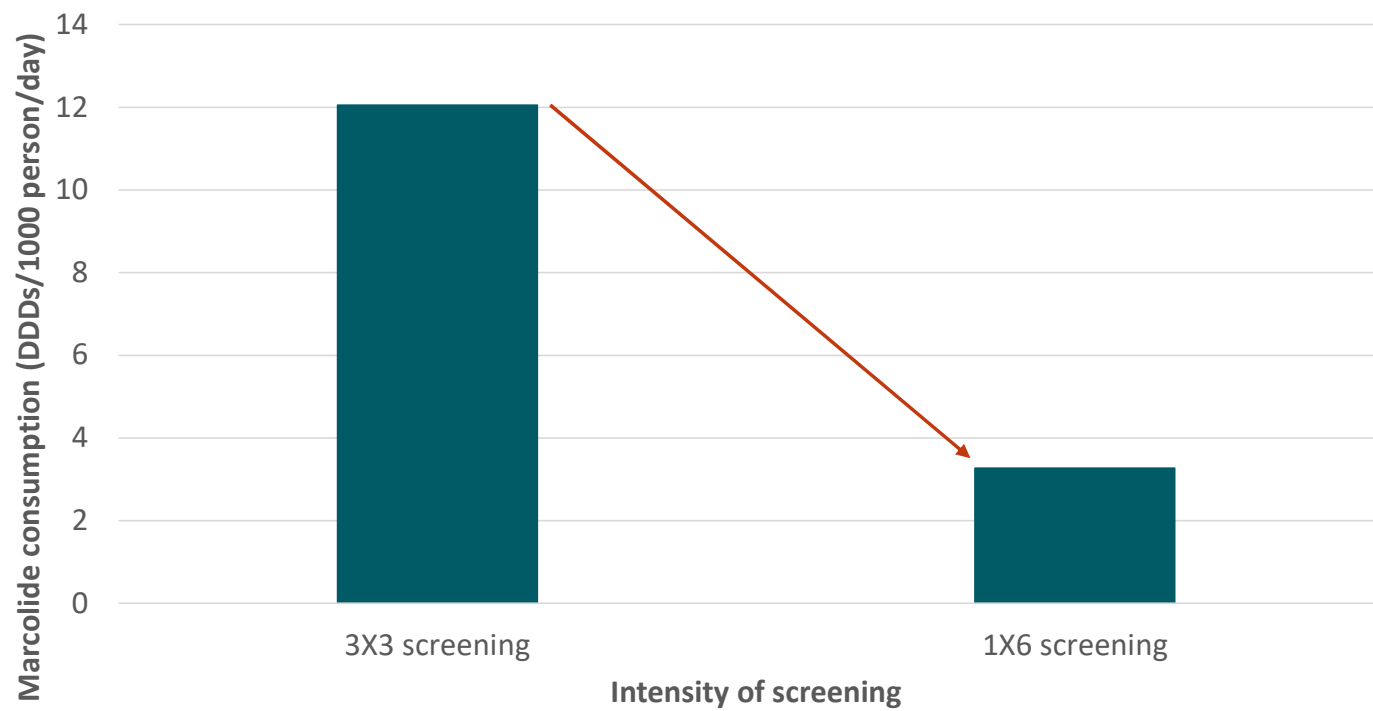
BE-PrEPared study

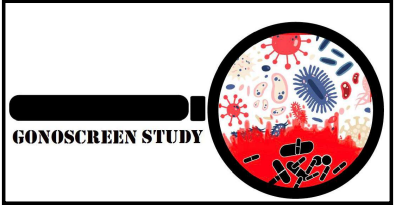






Macrolide consumption and screening intensity among MSM taking PrEP



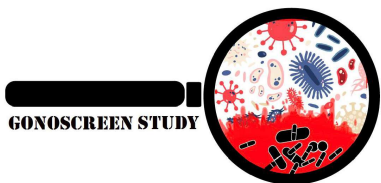
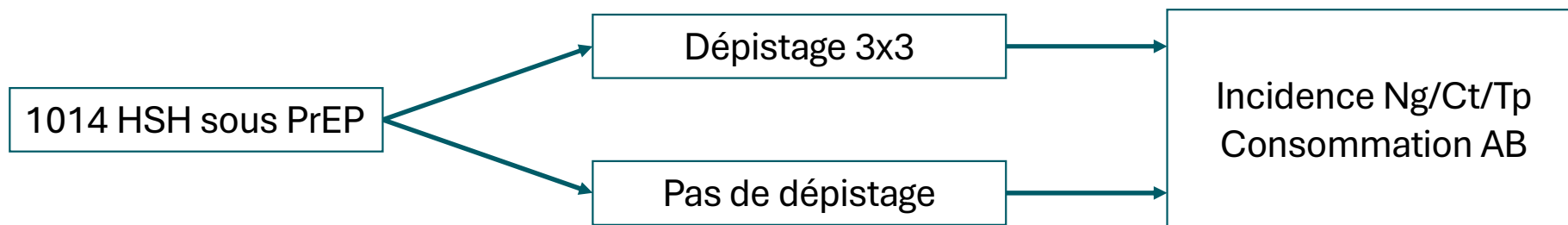


PrEP implementation + Ng/Ct testing restrictions

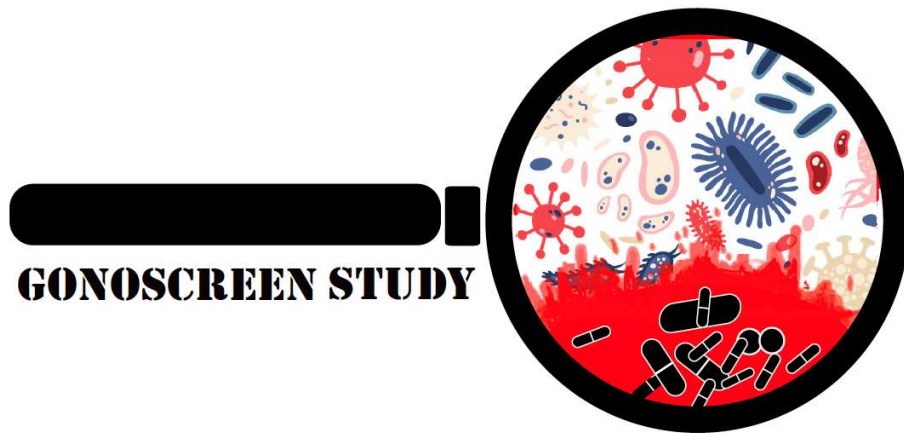
BE-PrEP a red study



Essai multicentrique, randomisé et contrôlé comparant le dépistage 3X3 de la gonorrhée et de la chlamydia à l'absence de dépistage chez les HSH sous PrEP

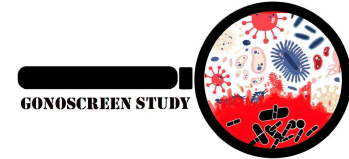


Essai multicentrique, randomisé et contrôlé comparant le dépistage 3X3 de la gonorrhée et de la chlamydia à l'absence de dépistage chez les HSH sous PrEP

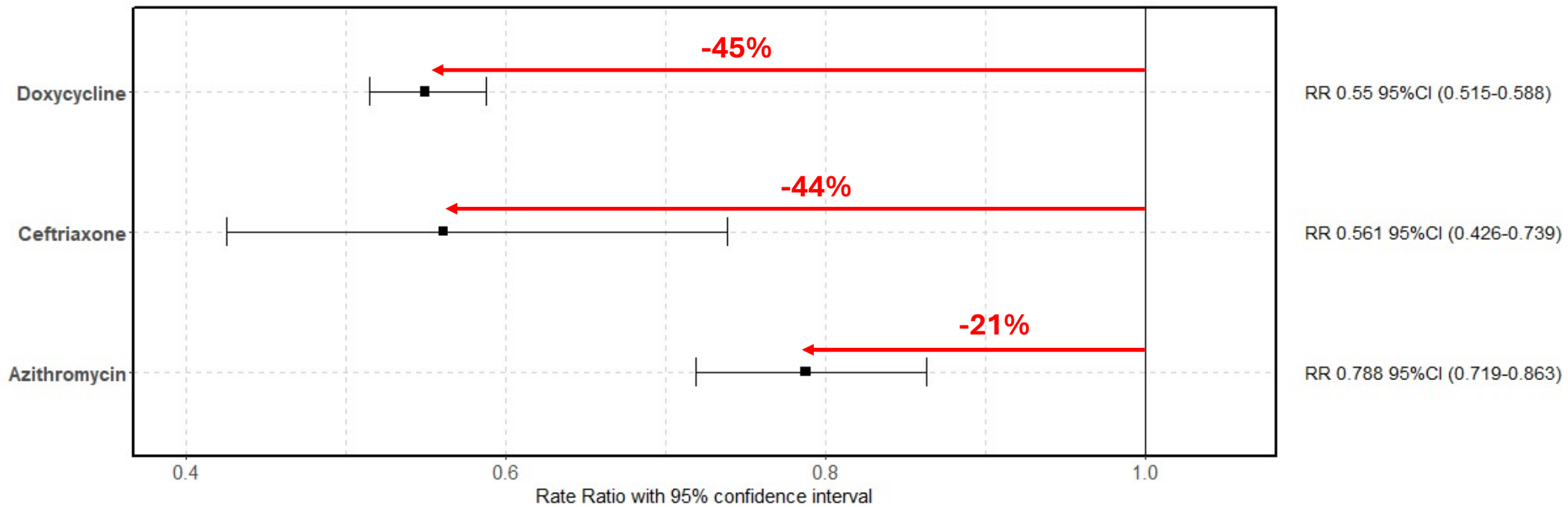


- Aucun effet sur les infections à Ng (symptomatiques)
- Effet potentiel sur les infections à Ct
- Aucun effet sur les infections à Ct symptomatiques

↓ dépistage -> ↓↓ consommation AB

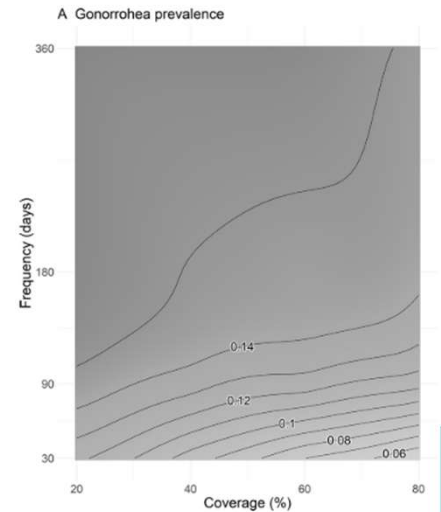
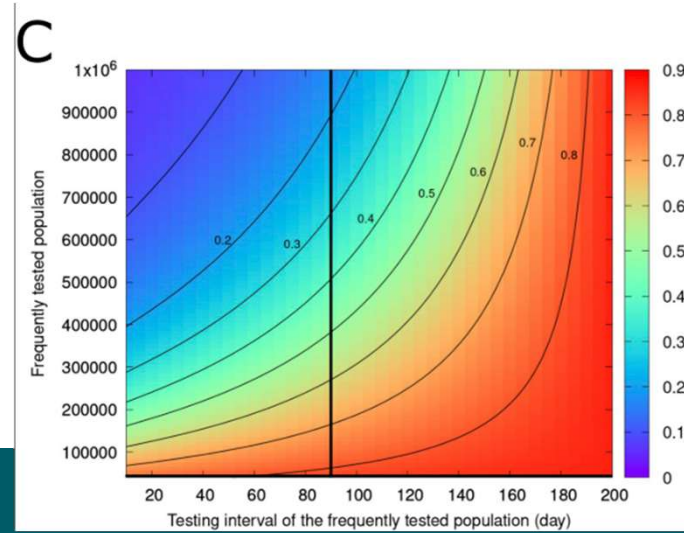
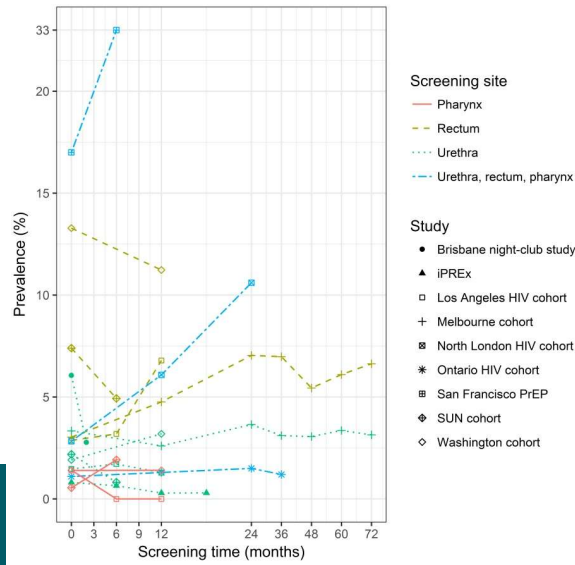
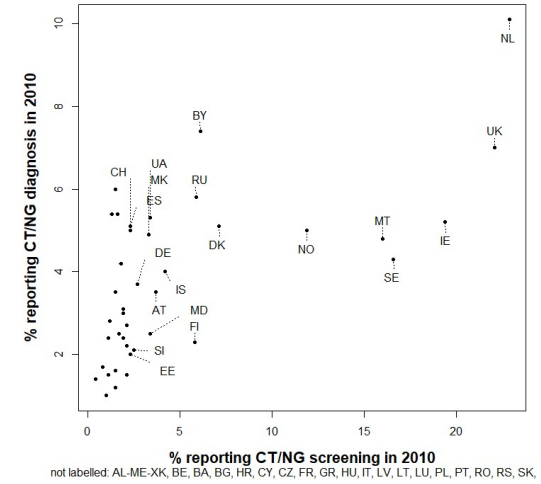
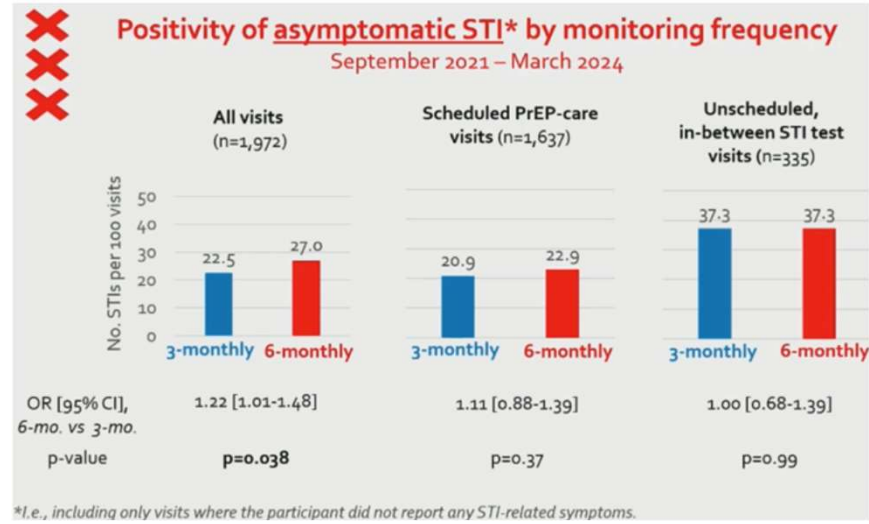
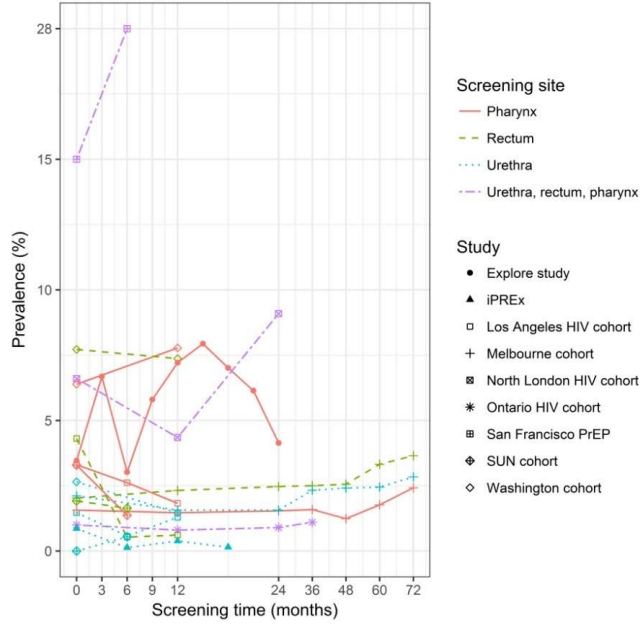


Rate ratios non-screening vs screening



Vanbaelen et al, Lancet HIV 2024





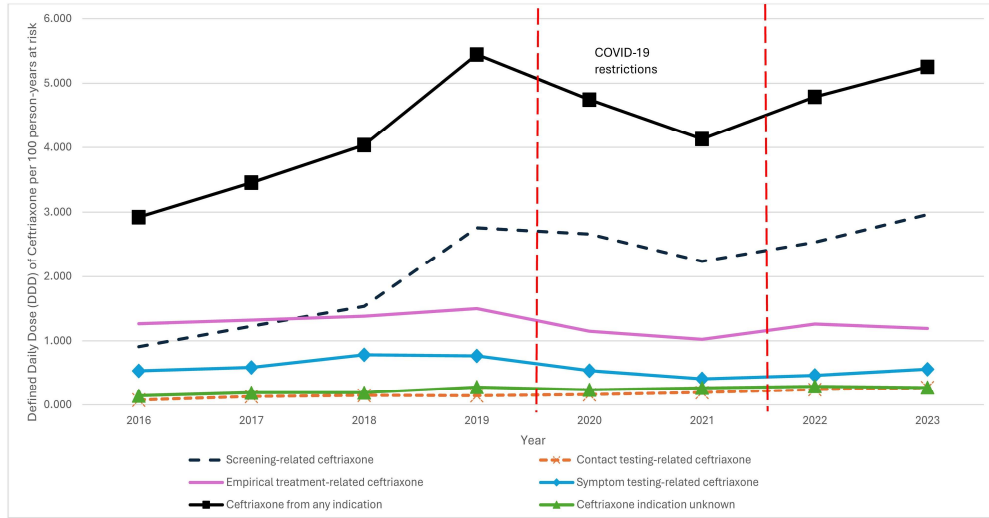
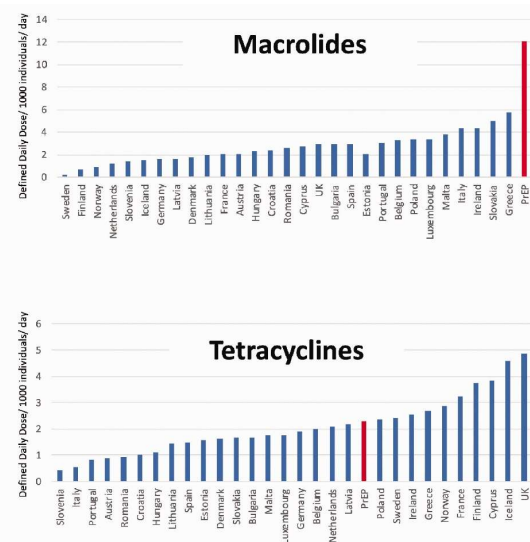
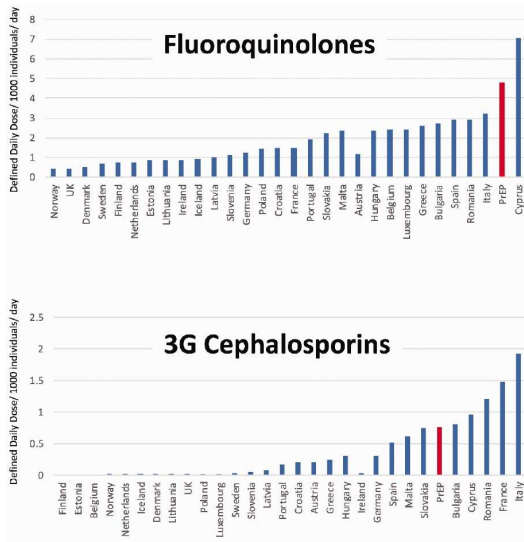
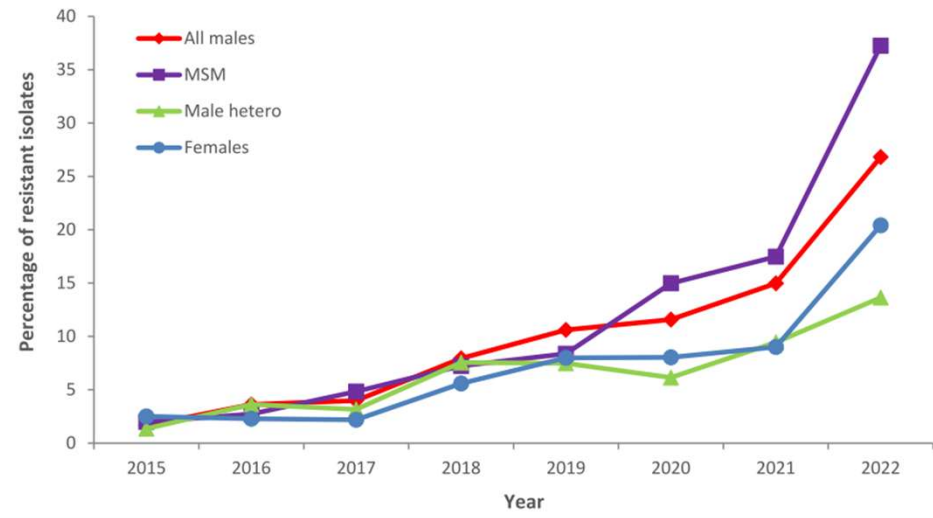
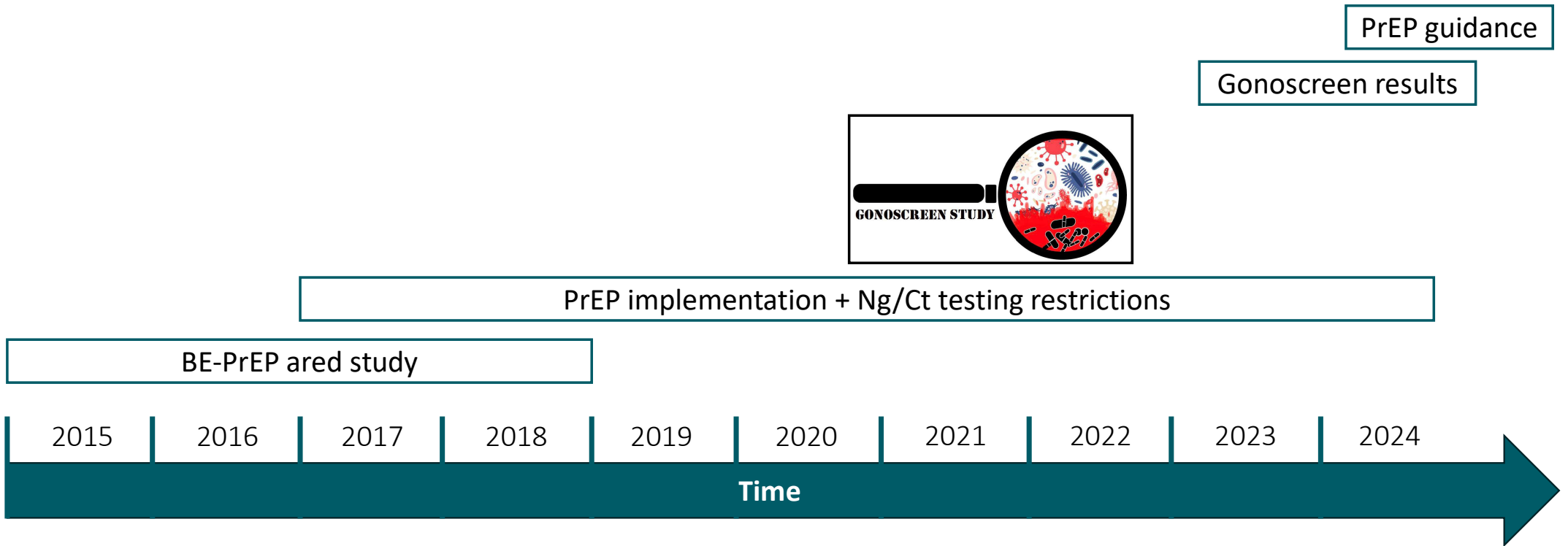


Figure 6. Percentage of isolates with azithromycin MICs above ECOFF (>1 mg/L) by gender and male sexual orientation, Euro-GASP, 2015–2022



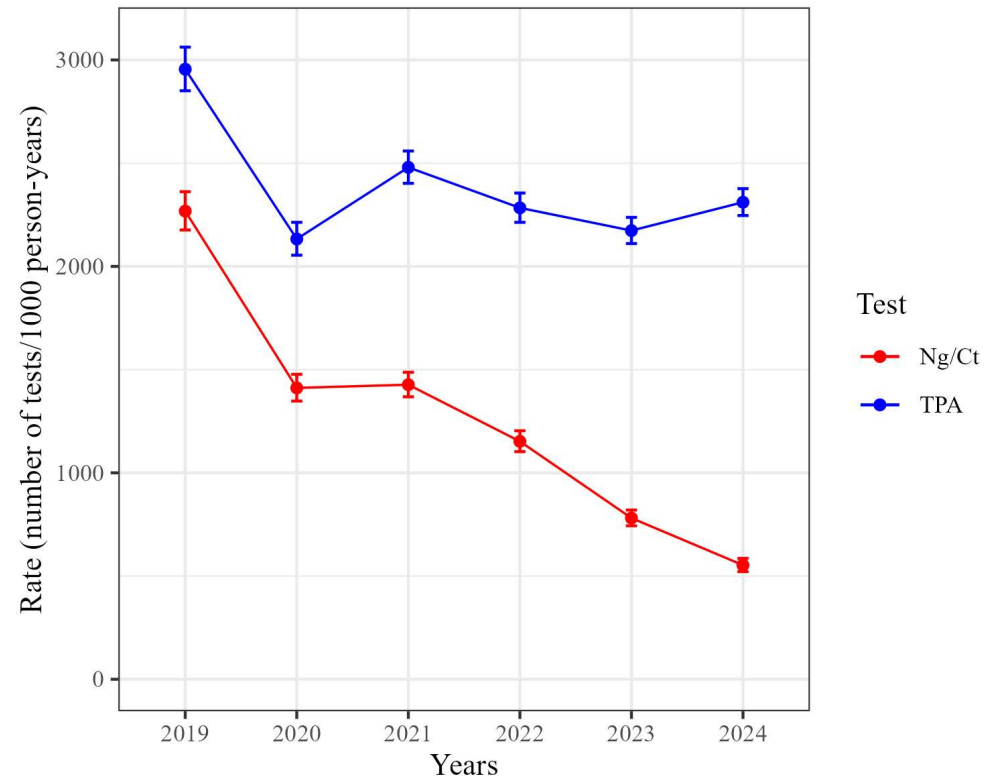


Based on the results of recent studies, including the Gonoscreen Study [9], and concerns of increasing antimicrobial resistance in species including *N. gonorrhoeae* (NG) and *M. genitalium*, we recommend only testing MSM who use PrEP for NG or Chlamydia trachomatis (CT) if:

- they have symptoms compatible with these infections or a partner has a symptomatic infection
- they have sex with women as well as men
- they express a strong desire for asymptomatic screening



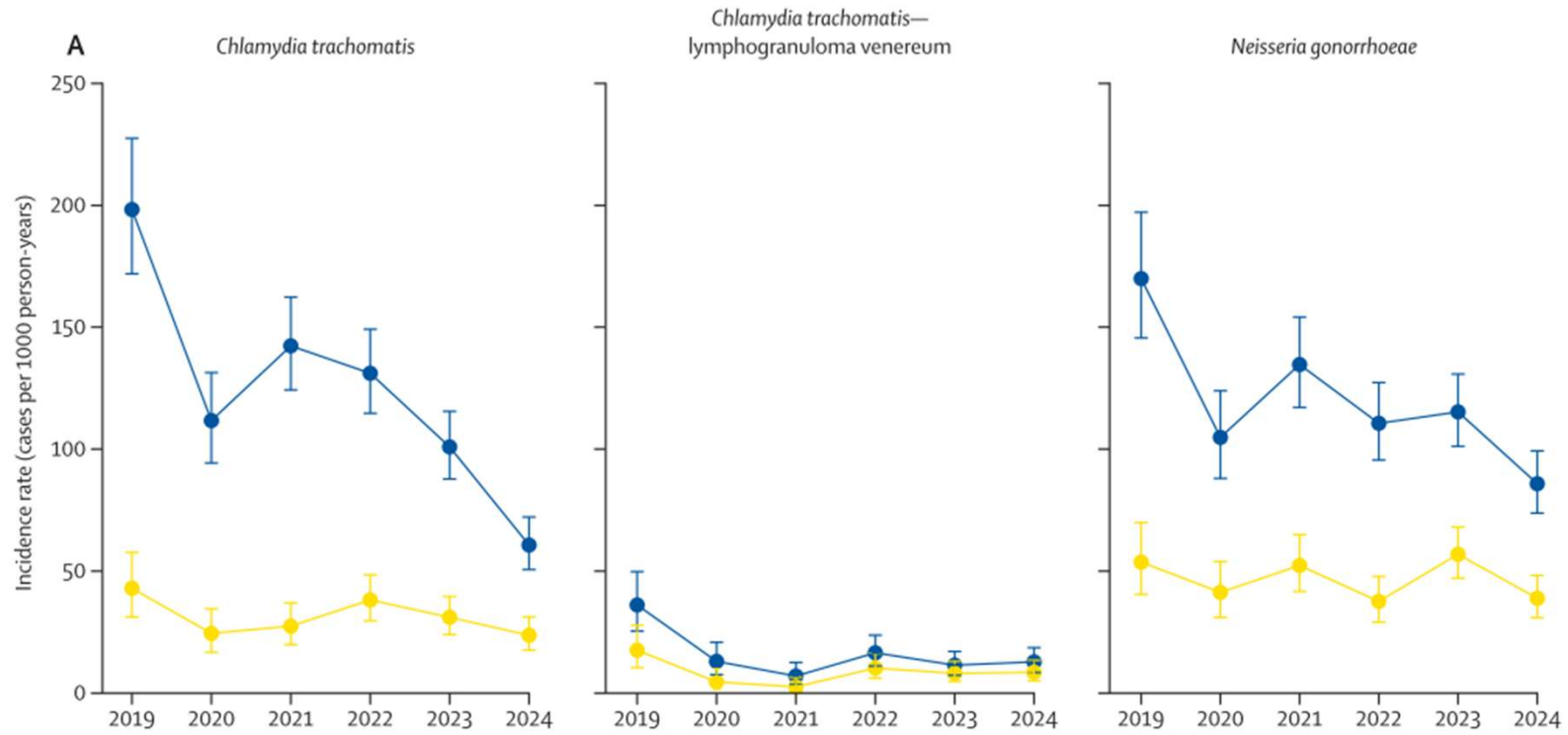
Real-world data



Vanbaelen, T., et al. (2025). [The Lancet Microbe: 101214.](#)



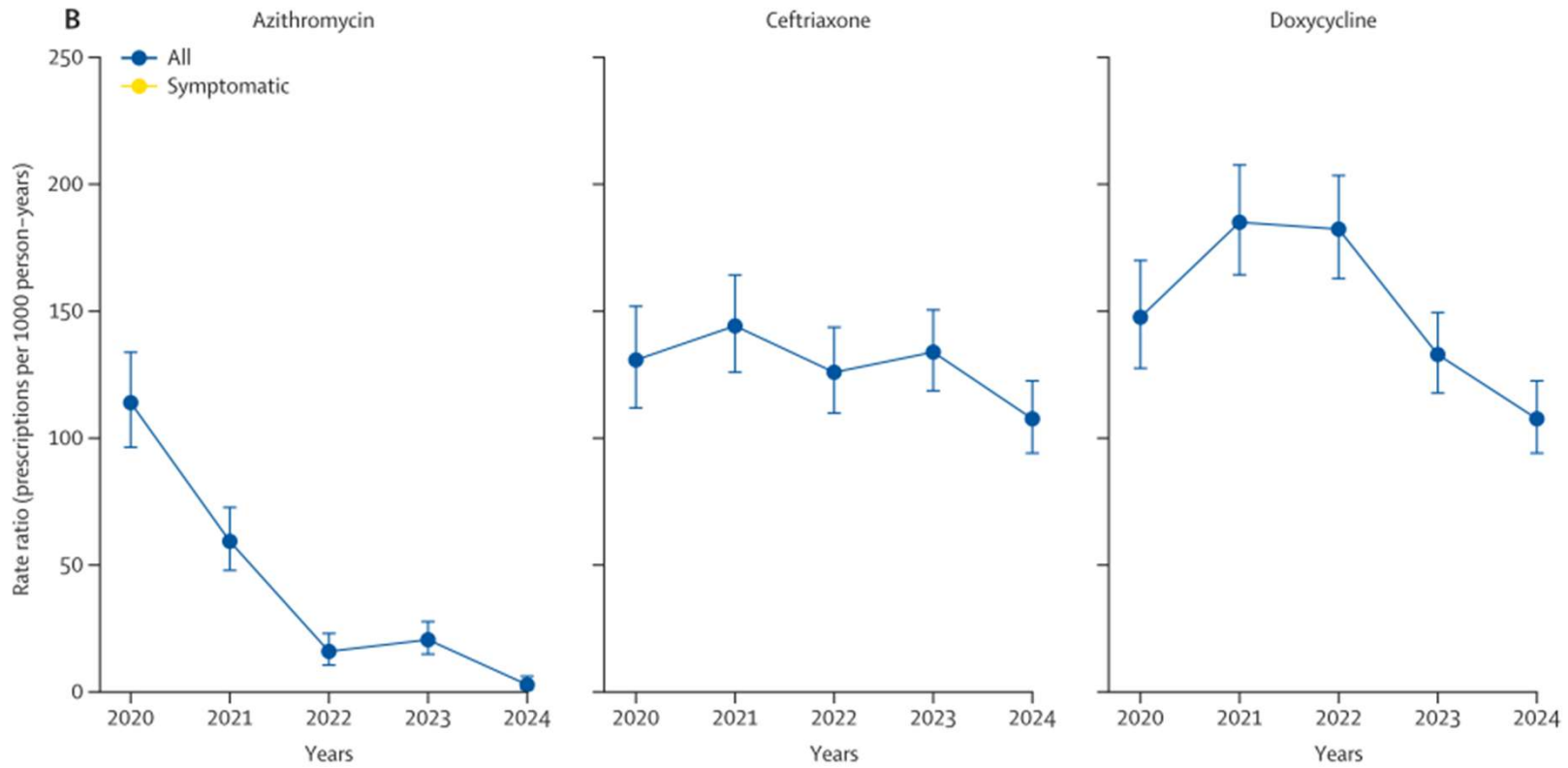
Real-world data



Vanbaelen, T., et al. (2025). [The Lancet Microbe: 101214.](#)

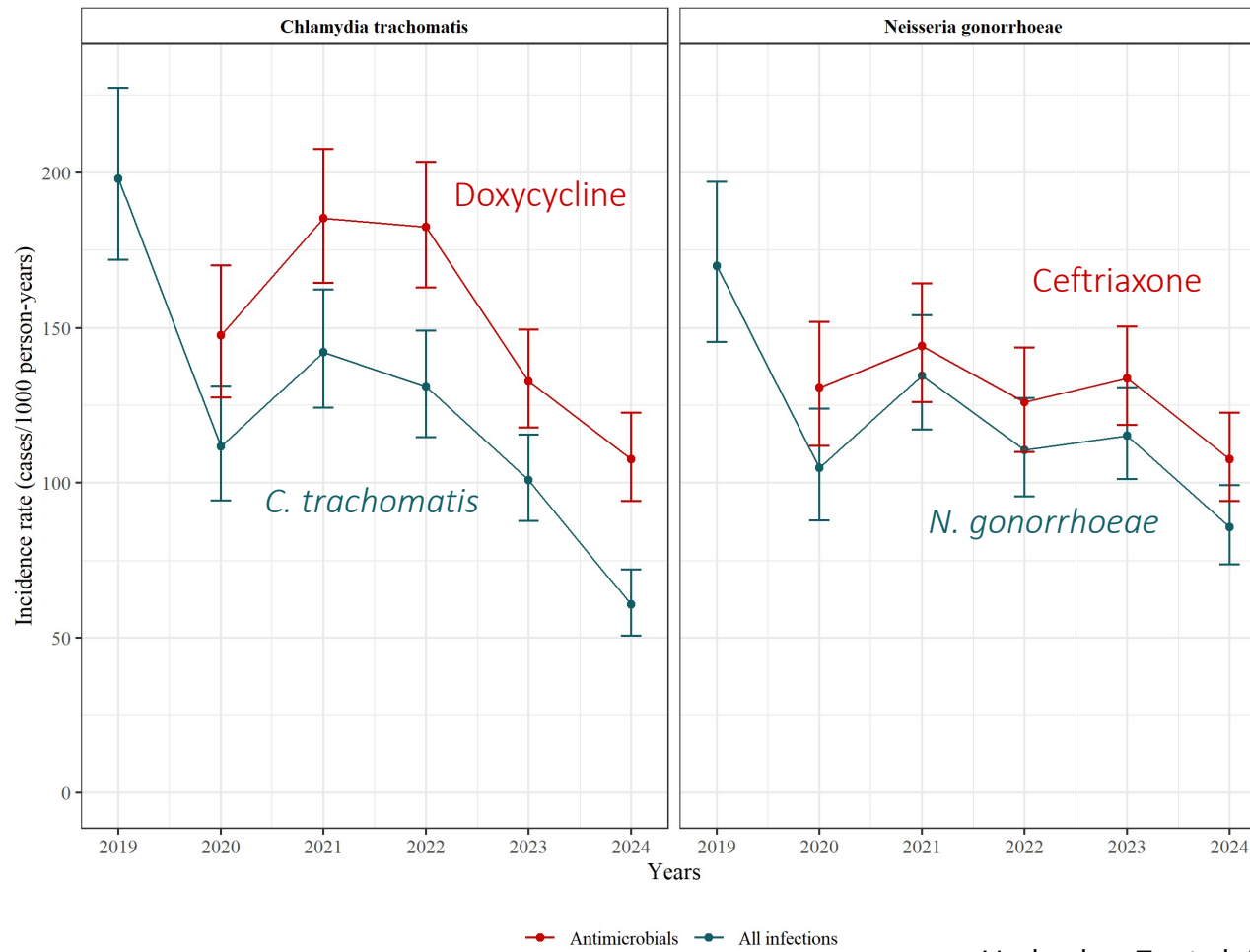


Real-world data



Vanbaelen, T., et al. (2025). [The Lancet Microbe: 101214.](#)



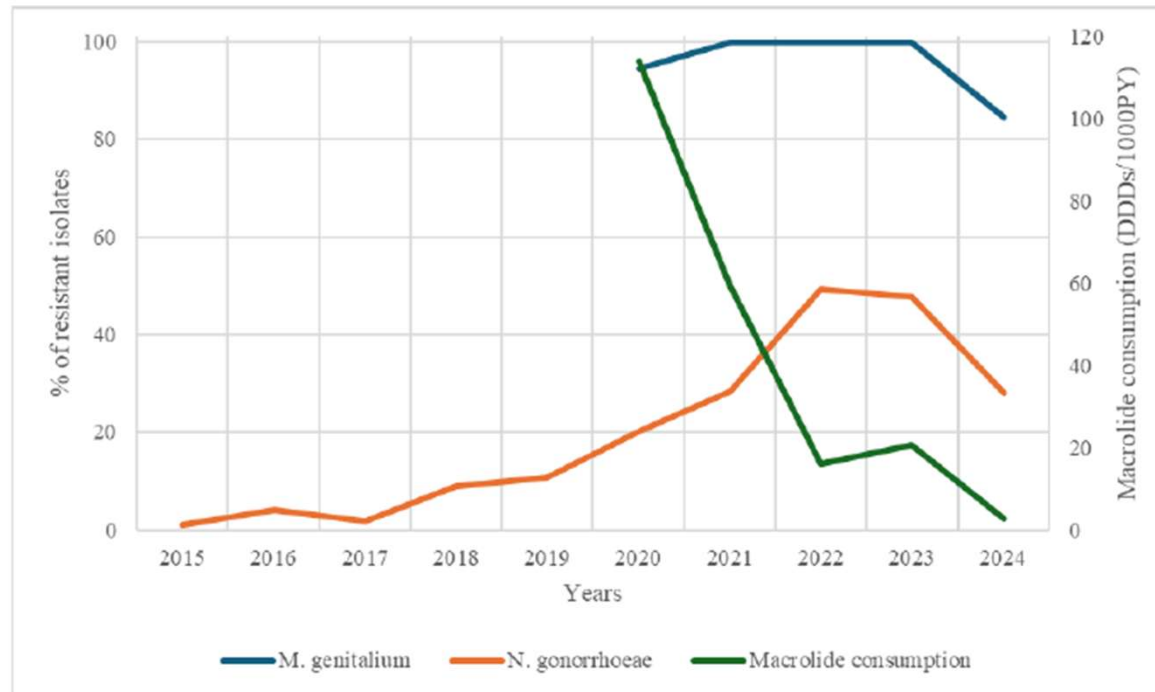


Vanbaelen, T., et al. (2025). The Lancet Microbe: 101214.



Real-world data

Figure S1 - Azithromycin resistance in *N. gonorrhoeae* (2015-2024), macrolide resistance in *M. genitalium* (2020-2024) among MSM in Belgium, and macrolide consumption among MSM attending a PrEP clinic in Belgium (2020-2024)



Vanbaelen, T., et al. (2025). [The Lancet Microbe: 101214.](#)



DoxyPEP



DoxyPEP

Doxycycline to prevent STIs ('doxy-PEP')

Doxycycline post exposure prophylaxis (doxy-PEP) refers to the intake of 200 mg within 24 to 72h

after sexual intercourse. In 1 - AMR bactéries cibles: NG, (Mgen) well as real-world data
have shown doxy-PEP to be • Tetracyclines
• Résistances croisées
gonorrhoea, depending on t - AMR bactéries off-target orrhoea strains.[17,52-54]

However, the long-term eff - Microbiote
(Diagnostic syphilis) e remain a major concern.

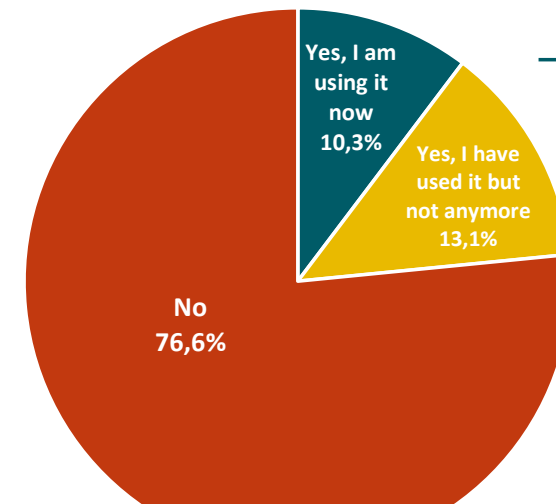
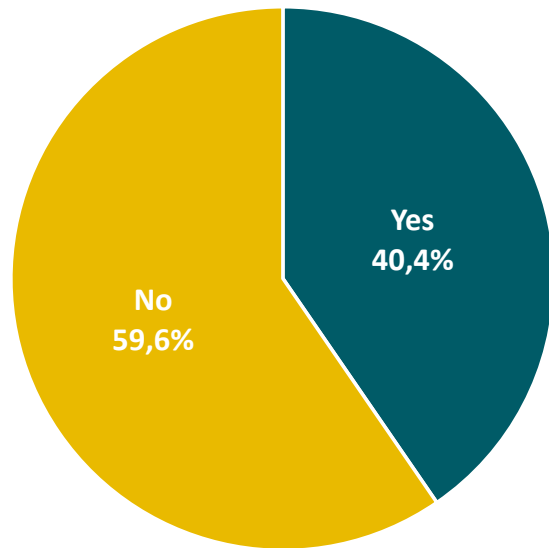
We therefore currently recommend against its widespread use. More details on the argumentation for this advice can be found in the supplementary appendix.



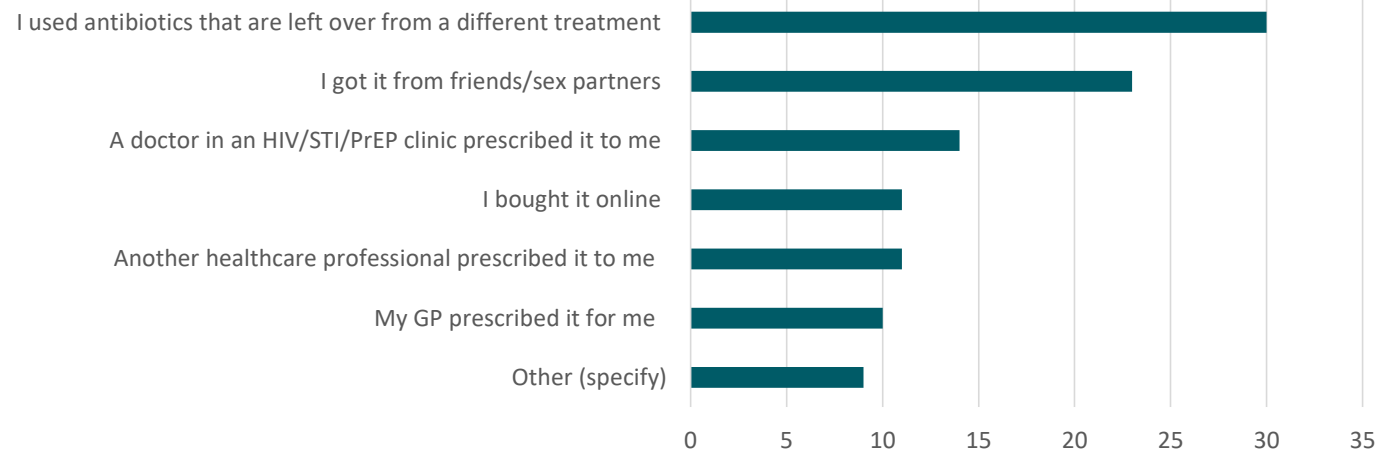
DoxyPEP (N = 875)

Have you ever used or are you currently using doxyPEP? (N=350)

Before today, had you ever heard of doxyPEP as a way to prevent bacterial STIs?



How did you obtain doxyPEP?* (N=80)



Vanbaelen, T., et al. (2025). *Sex Transm Infect* **101(1): 34-40.**



DoxyPEP & résistance aux tétracyclines (NG)

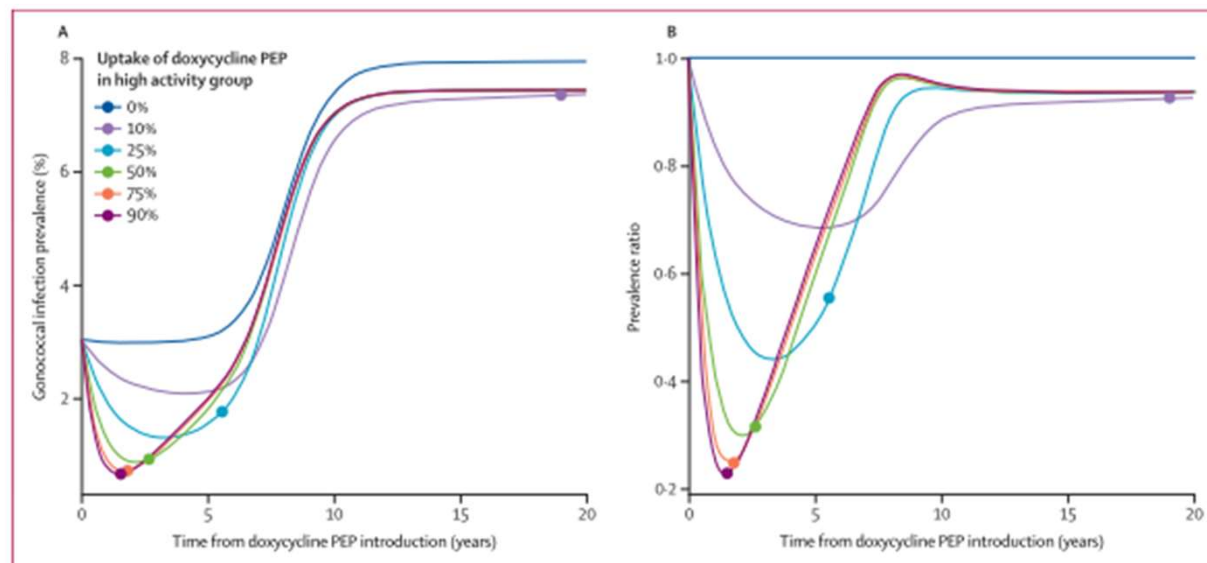


Figure 1: Prevalence of gonococcal infection over time for varying levels of doxycycline PEP uptake

Yechezkel, M., et al. (2026). [The Lancet Infectious Diseases](#).
Reichert, E. and Y. H. Grad (2024). [The Lancet Microbe](#) 5(11): 100926.



DoxyPEP & résistance aux tétracyclines (NG)

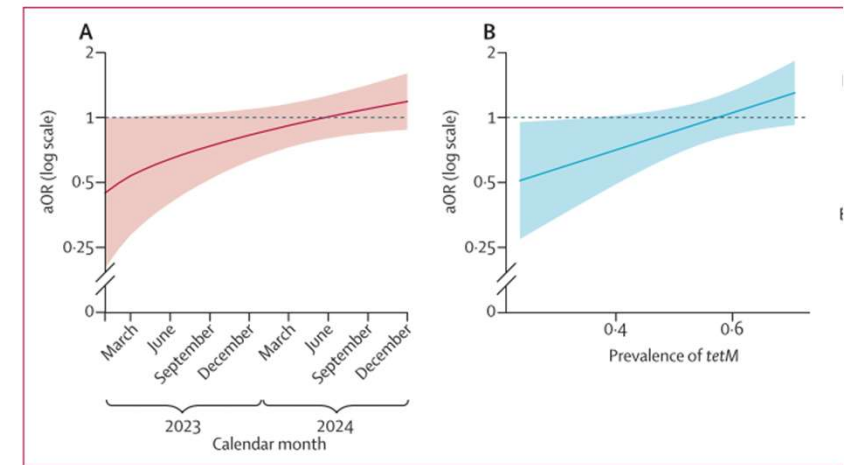
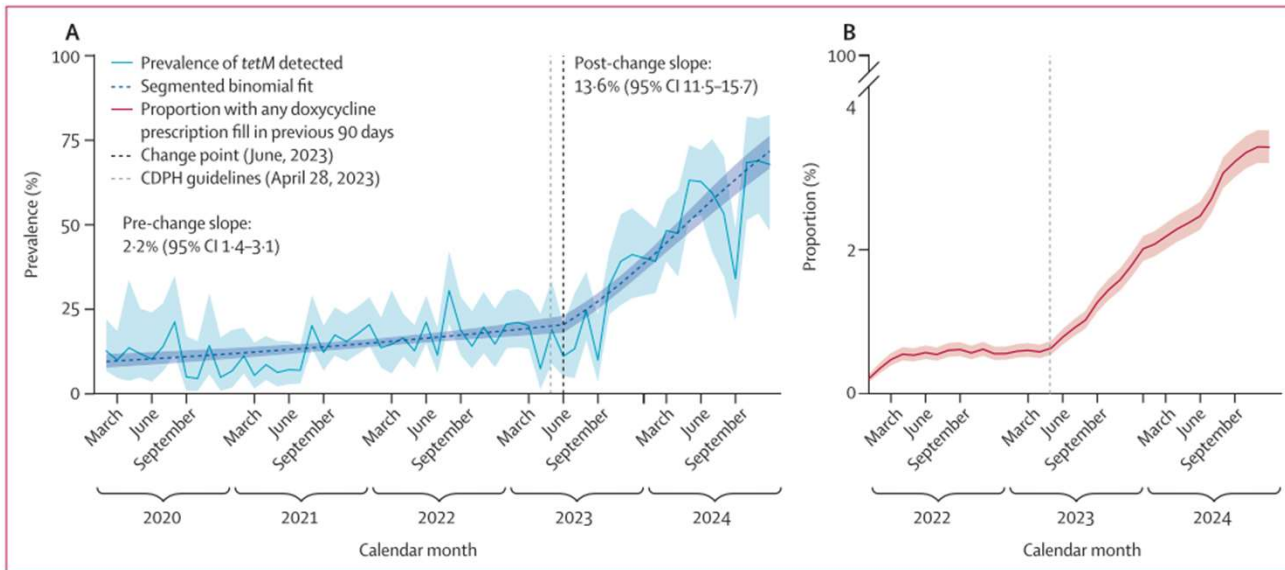
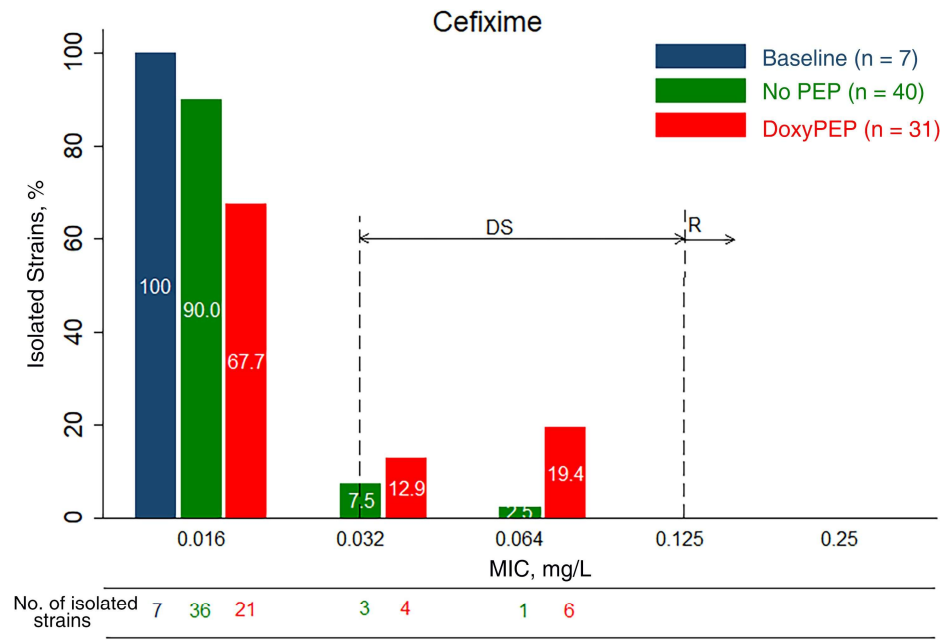


Figure 3: Doxycycline PEP effectiveness over time and by *tetM* prevalence, and time to loss of effectiveness

Yechezkel, M., et al. (2026). [The Lancet Infectious Diseases](#).
 Reichert, E. and Y. H. Grad (2024). [The Lancet Microbe 5\(11\): 100926](#).



DOXYVAC



MIC (mg/L)	Baseline (n=7)	No PEP (n=40)	DoxyPEP (n=31)
0.016	7	36	21
0.032	0	3	4
0.064	0	1	6

DS, decreased susceptibility ; R, resistance

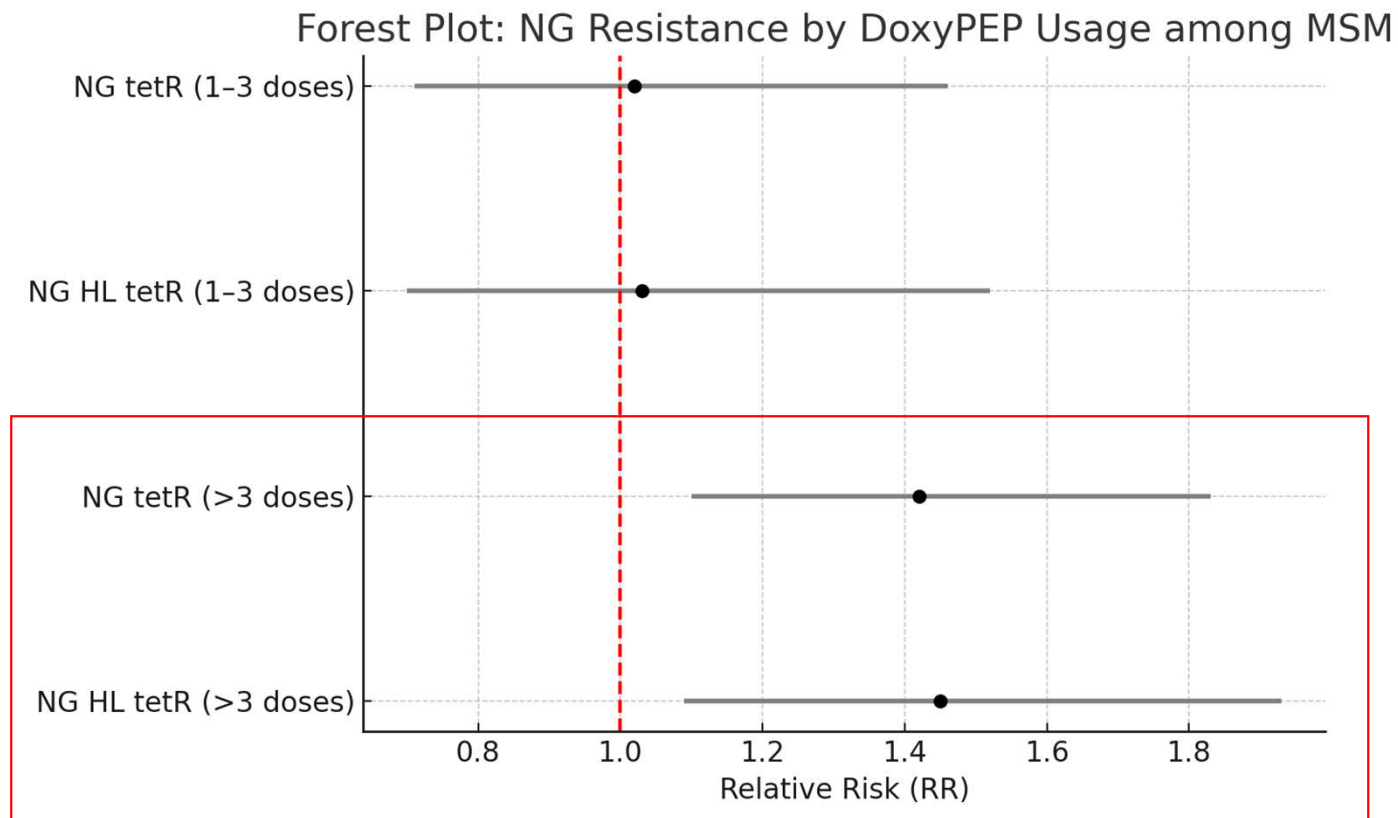
Presence of a cluster carrying the *penA34.007* allele associated with Decreased Susceptibility to cefixime

Pts	Visit	Arm	<i>penA34.00</i>	Cefixime: DS	Ceftriaxone: S	Azithromycin: S	Ciprofloxacin: R	Tetracycline: HLR	TetM TEM	MLST
FR062014COUCDV	SA	INFV3	PEP B2	34.007	0.064	0.016				8123
FR063042LIUQDV	SL	M9 DV	PEP B2	34.007	0.064	0.008				8123
FR063125FOJYDV	SL	M3 DV	PEP B2	34.007	0.064	0.008				8123
FR063134OJAPDV	SL	INFV1	NOPEP B3	34.007	0.064	0.008				8123
FR049009FYIBDV	TE	M9 DV	PEP B2	34.007	0.032	0.008				7363
FR063173VUQEDV	SL	M9 DV	PEP B1	34.007	0.032	0.008				7363
FR044001NUQODV	PO	M6 DV	PEP B1	34.007	0.032	0.008				7363
FR063137YLEBDV	SL	M6 DV	PEP B2	34.007	0.064	0.008				7363
FR063002GOYFDV	SL	M15 DV	NOPEP B3	34.007	0.032	0.008				7363
FR063094ODXYDV	SL	M12 DV	PEP B1	34.007	0.064	0.008				7363
FR073036IGVADV	BI	M12 DV	PEP B1	34.007	0.064	0.008				7363
FR073042AGTUDV	BI	M9 DV	PEP B1	34.007	0.032	0.004				9362
FR063035UKGODV	SL	INFV2	NOPEP B4	34.007	0.032	0.004				9362

Bercot, B., et al. (2025). *Clinical Infectious Diseases*.
 Bercot, B., et al. (2024). *International Union against Sexually Transmitted Infections Europe Congress*. Zagreb.



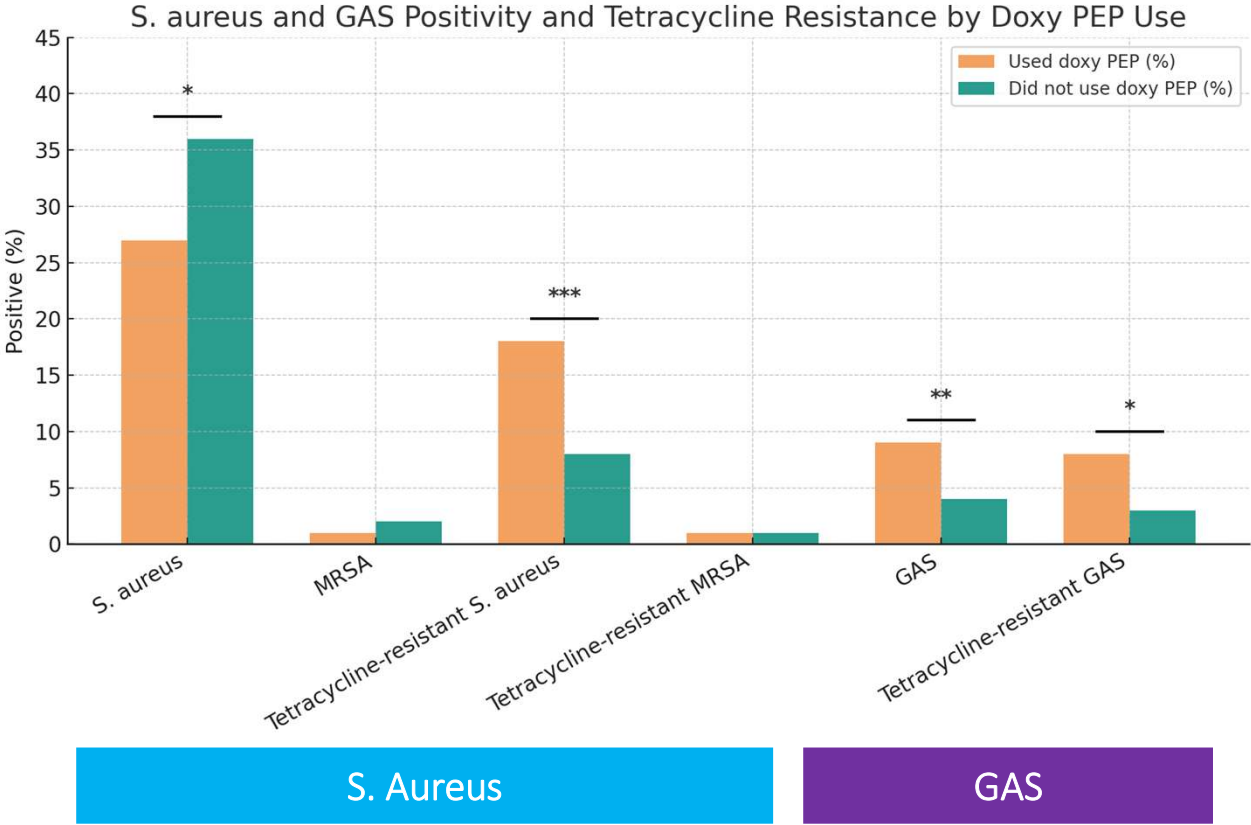
DoxyPEP & AMR in *N gonorrhoeae* => seuil de consommation?



Soge et al, *Clin Infect Dis*, Volume 80, Issue 6, 15 June 2025, Pages 1188–1196, <https://doi.org/10.1093/cid/ciaf089>



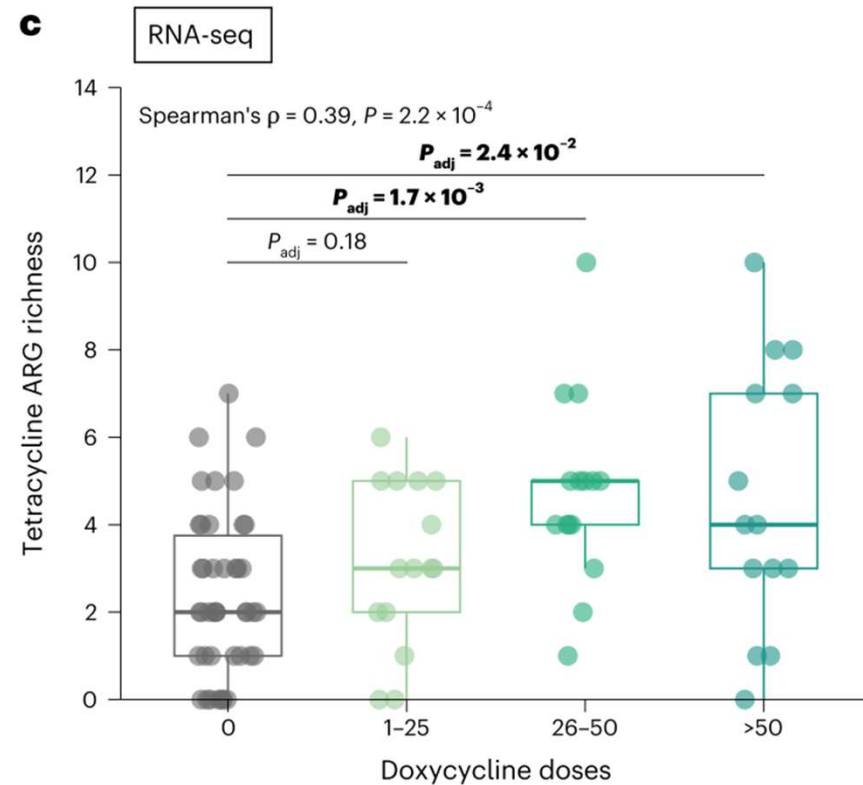
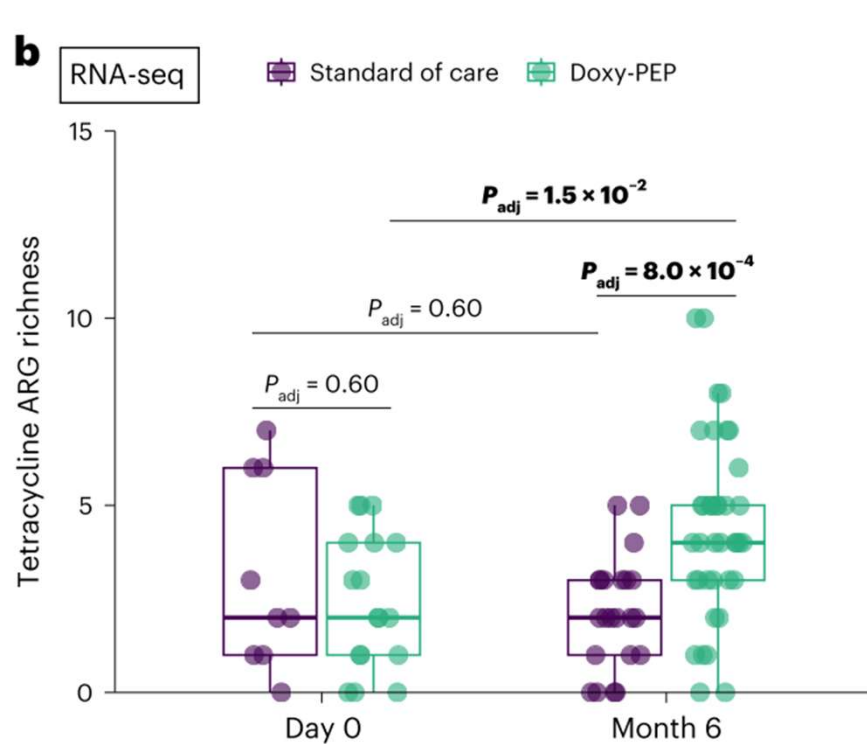
AMR in *S Aureus* & GAS



Soge et al, Clin Infect Dis, Volume 80, Issue 6, 15 June 2025, Pages 1188–1196

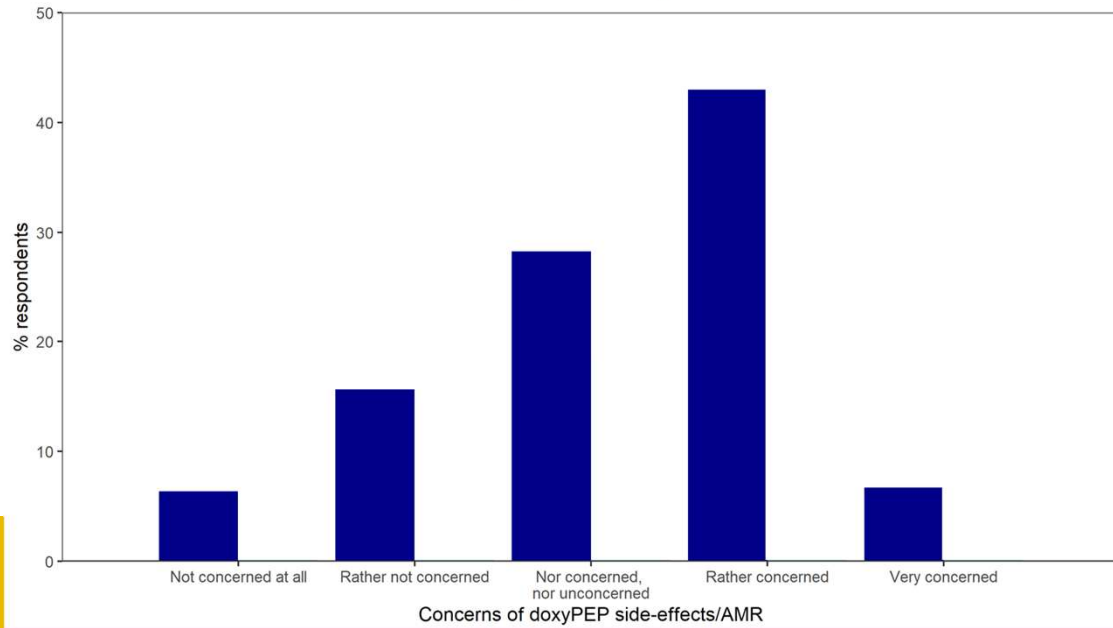
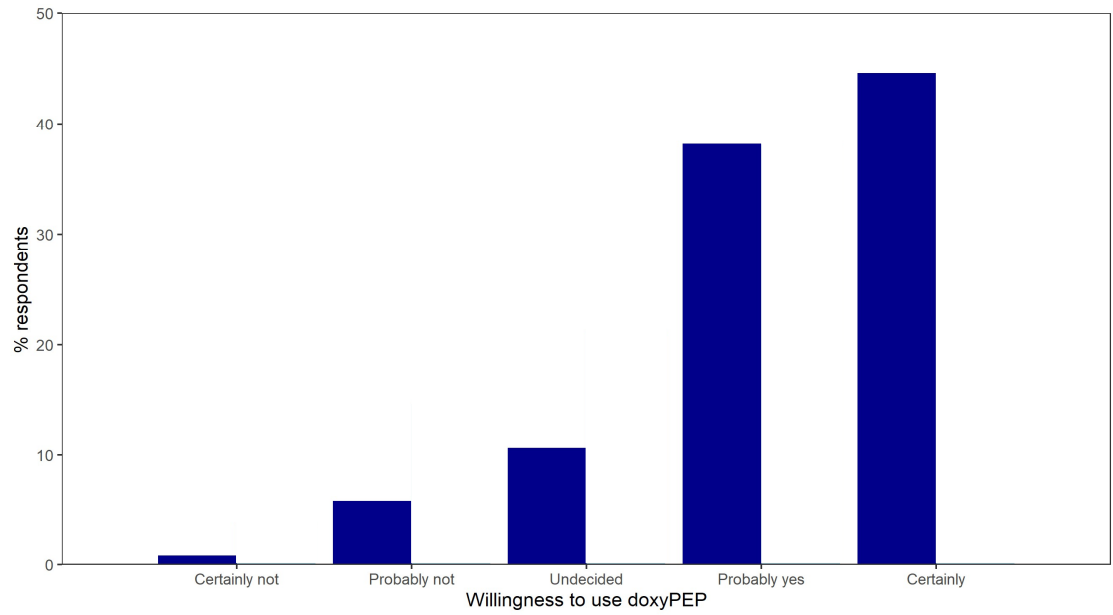


Doxy-PEP pendant 6 mois n'a eu qu'un impact minime sur la composition taxonomique de la flore intestinale, mais...



Chu, V. T., et al. (2025). *Nat Med* **31(1)**: 207-217.



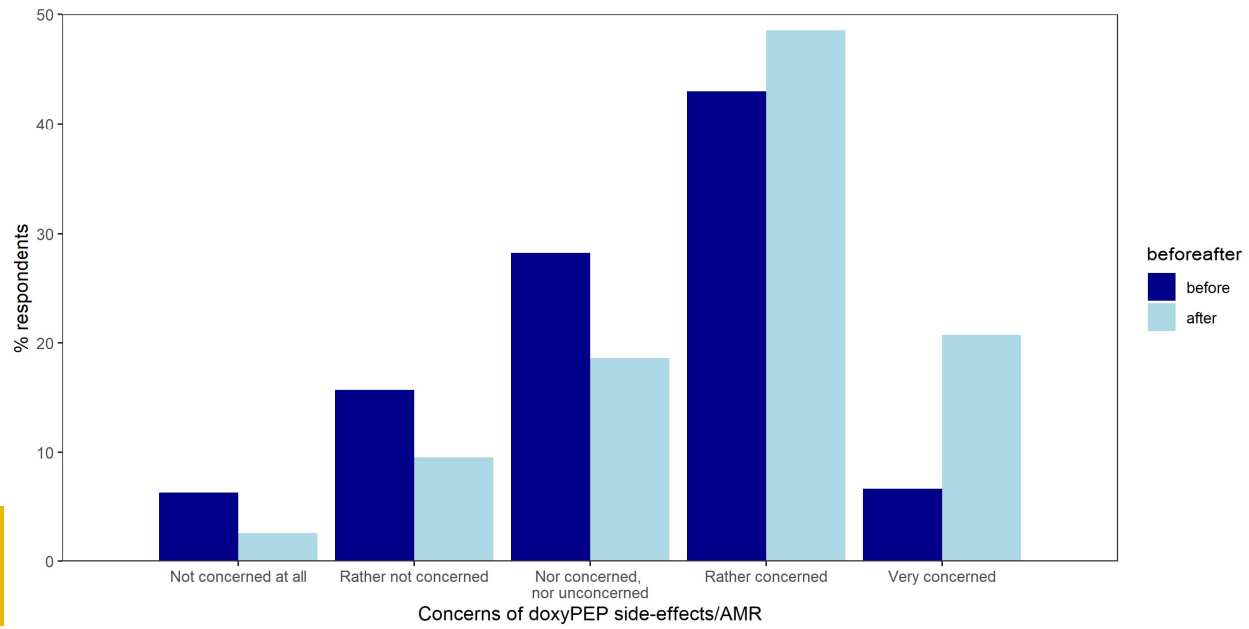
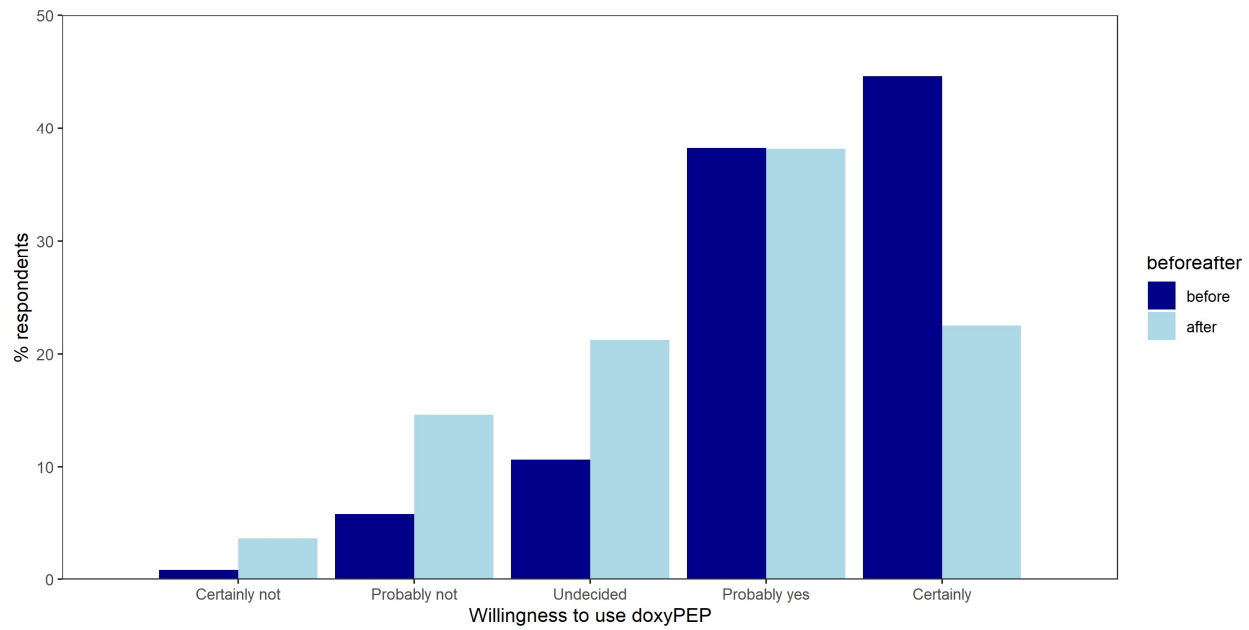


Vanbaelen, T., et al. (2025). *Sex Transm Infect* **101(1)**: 34-40.



“La principale préoccupation liée à l'utilisation de la doxyPEP est qu'elle pourrait rendre les bactéries résistantes aux antibiotiques (c'est-à-dire induire une résistance aux antibiotiques). Cela signifie que les infections pourraient devenir plus difficiles à traiter avec des antibiotiques. D'autres études ont également montré que la doxyPEP pourrait ne pas prévenir la gonorrhée, car cette infection est déjà résistante à la doxycycline.”





Vanbaelen, T., et al. (2025). *Sex Transm Infect* **101(1)**: 34-40.

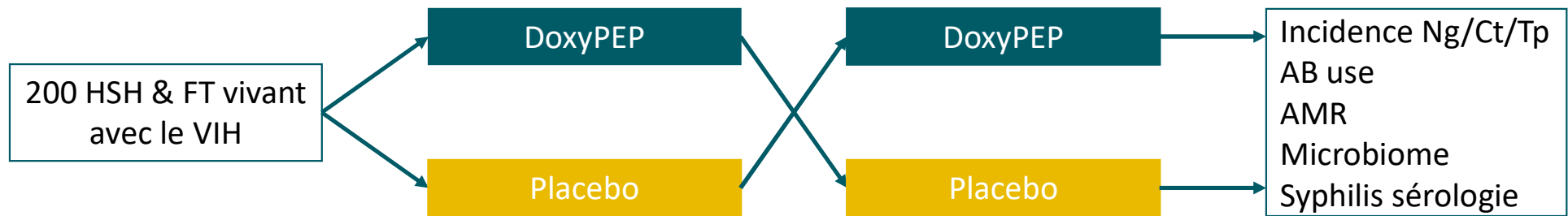


Etude DoxHIV (EU CT 2025-521153-16-00)

- **Design** : essai clinique en double aveugle, multicentrique, croisé, randomisé et contrôlé par placebo visant à évaluer l'efficacité du doxyPEP dans la réduction de l'incidence des IST bactériennes chez les HSH et les personnes transgenres vivant avec le VIH en Belgique
 - **Population** : 200 HSH vivant avec le VIH
- ➔ Balance bénéfices – risques de la doxyPEP en l'absence de dépistage systématique Ng/Ct chez les HSH



Etude DoxHIV (EU CT 2025-521153-16-00)



➔ Balance bénéfices – risques de la doxyPEP en l’absence de dépistage systématique Ng/Ct chez les HSH

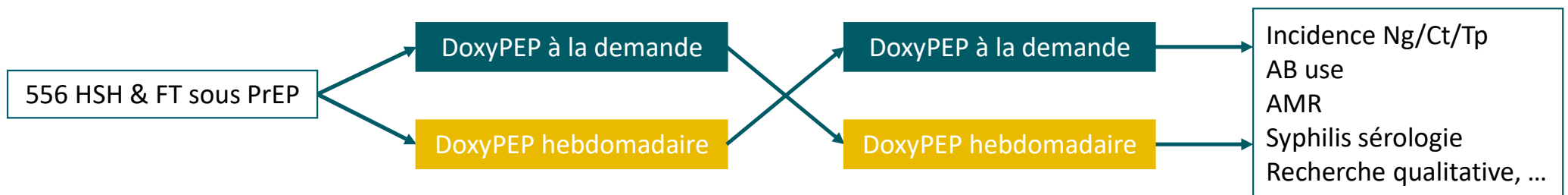


Etude DOXY-WISE (EU CT 2025-524823-34)

- Design : Essai clinique ouvert, monocentrique, randomisé, contrôlé et en croisé visant à évaluer l'efficacité de la doxyPEP hebdomadaire par rapport à la doxyPEP « à la demande » pour réduire l'incidence des IST bactériennes chez les HSH et les personnes transgenres vivant avec le VIH et suivant un traitement de PrEP en Belgique
- Population: 556 HSH ou TGW sous PrEP



Etude DOXY-WISE (EU CT 2025-524823-34)

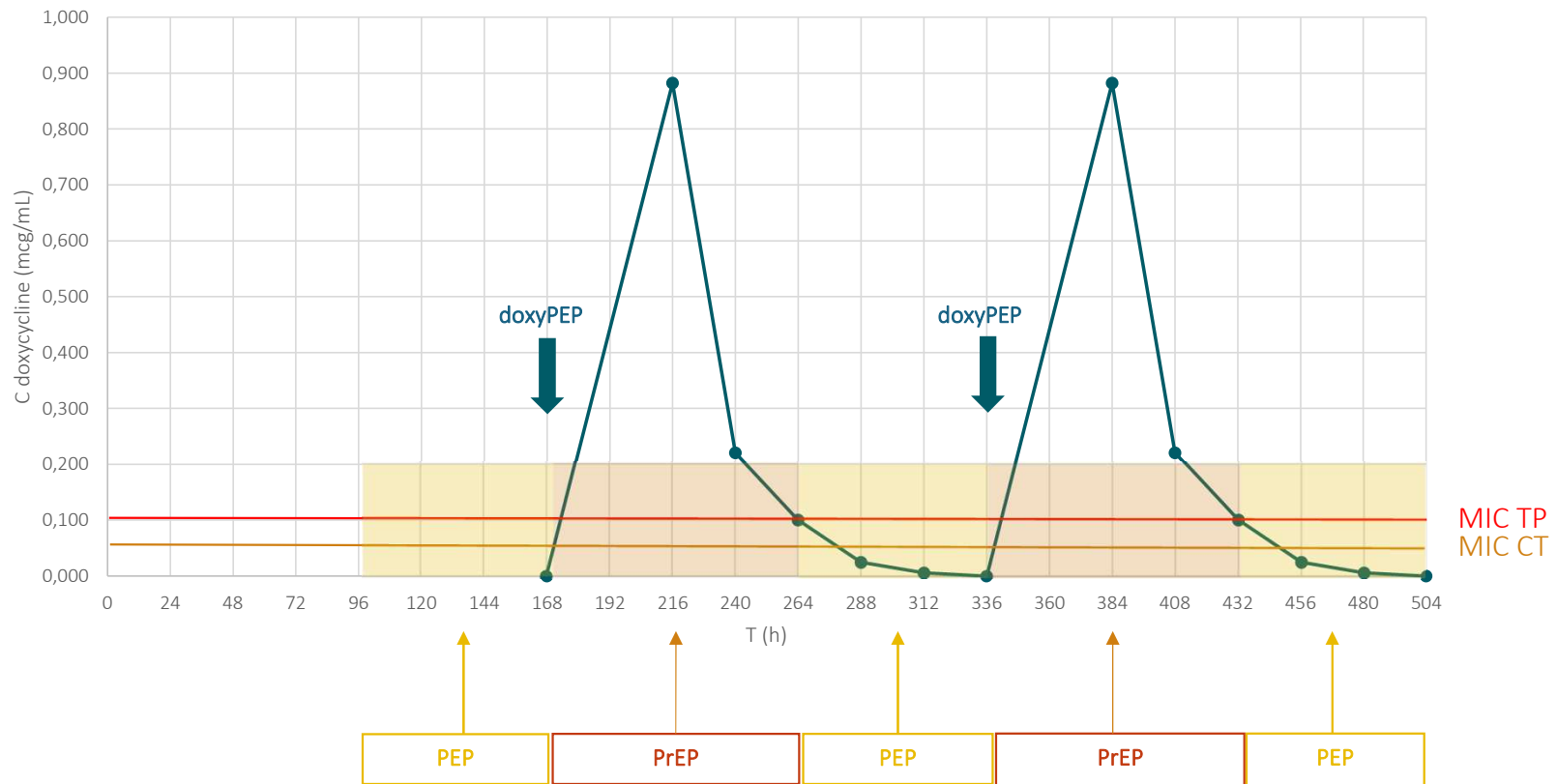


➔ Effet positif sur la syphilis en mitigeant les effets négatifs en terme de résistance

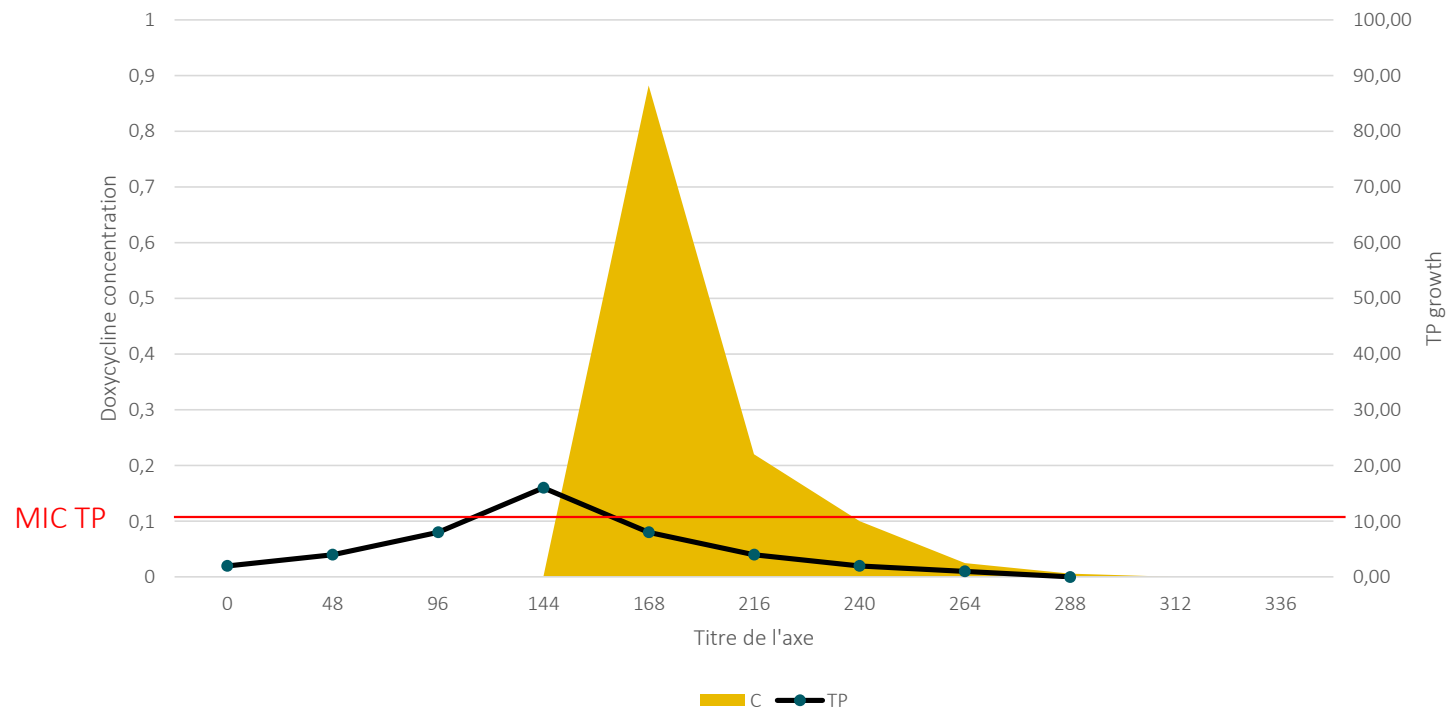


Etude DOXY-WISE (EU CT Number 2025-524823-34)

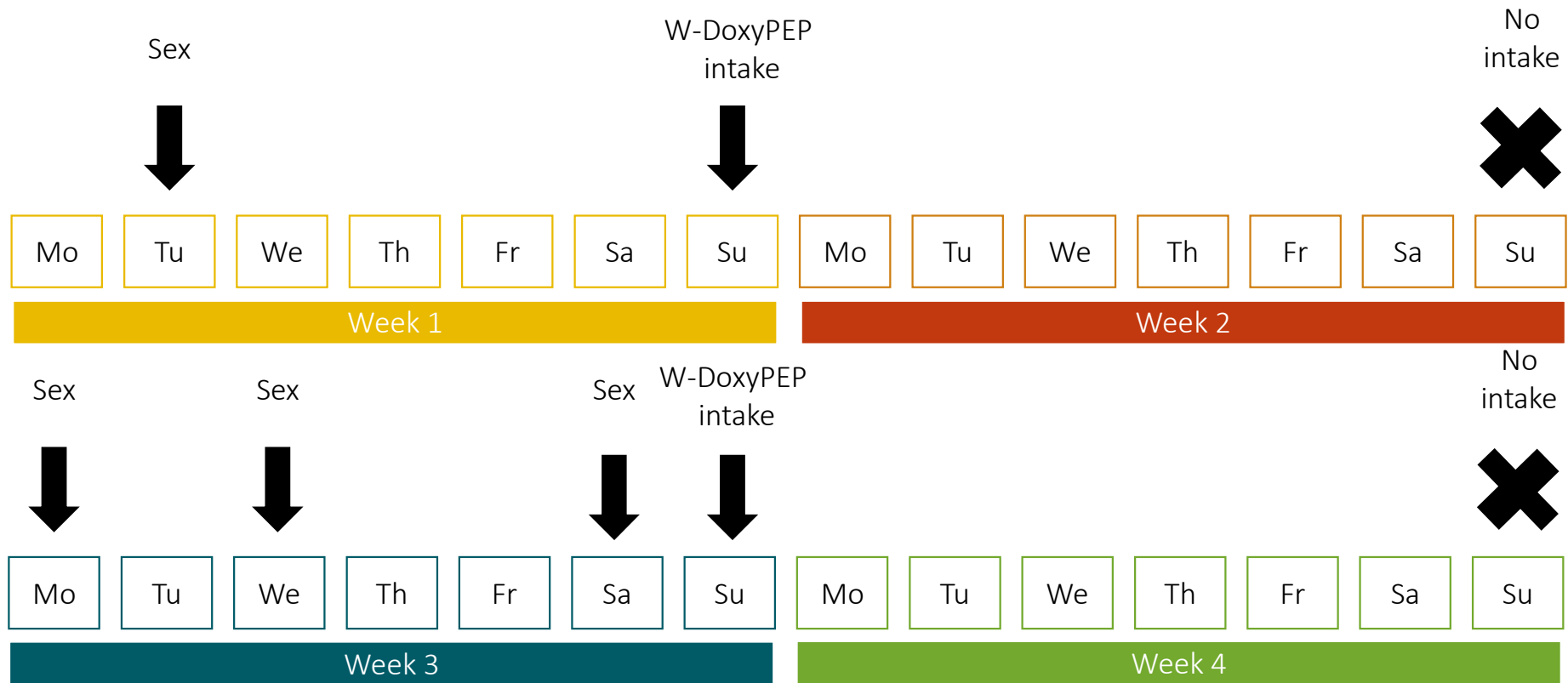
Doxycycline concentration over time in rectal tissue in men



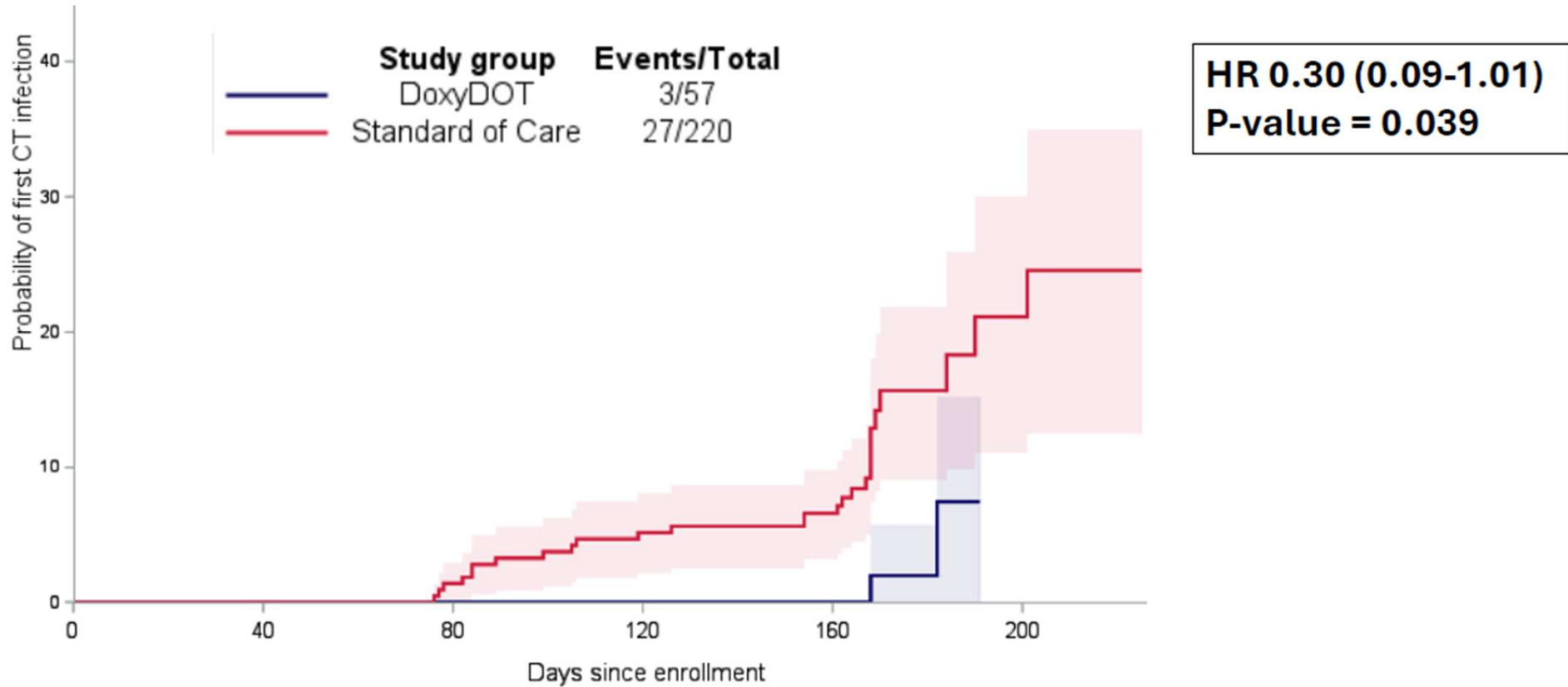
Etude DOXY-WISE (EU CT Number 2025-524823-34)



Etude DOXY-WISE (EU CT 2025-524823-34)



Results – Time to First Chlamydia



Vaccination contre les méningocoques



Vaccination méningocoque

Immunisation schedule for people using PrEP (November 2025*)				
Vaccine	16-26 years	27-59 years	60-64 years	≥65 years
HPV	2-3 doses (0,(2), 6 months) ¹		27-45 years: shared decision making	
Hepatitis A ²	2 doses, Month 0 and Month 6-12.			
Hepatitis B	If no prior vaccination, 3 doses (month 0, 2 and 6), Hep B anti-HbS 1 month later (immunity if >10 IE/l)			
Meningococcal	Men ACWY : 1 dose. If immunosuppression, 2 doses of Men ACWY 8-12 weeks apart. Booster: every 5 years. Meningococcal B vaccine: 2 doses (0-2 months) if specific risk factors ³			
Mpox	2 doses; day 0, day 28 (if risk factors)			
Basis vaccinations (including MMR)	Update according national guidelines. MMR ⁴			
<p>1. Current evidence suggests two HPV vaccine doses protect as well as three in healthy adults. 2. If Twinrix[®] is used: 3 doses M1, M1, M6 3. Bexsero protects partly against gonorrhoeae (30-40%). However, the duration of protection is not known, and booster vaccination might be needed. See also specific risk factors for Men ACWY and Men B below. 4. For MMR protection, individuals born before 1970 can generally be considered immune. In persons born in Belgium between 1970 and 1986, vaccination status should be verified. If there is uncertainty or no documentation of vaccination, MMR vaccine should be administered (1 or 2 dose).</p>				



Infections invasives à méningocoques chez les HSH

Table 3. Annualized Meningococcal Disease Incidence Rate and Relative Risk Among Men Who Have Sex With Men (MSM) and Men Not Known to Be MSM Aged 18–64 Years, January 2012–June 2015

Category	Cases, No.	Estimated Population, No.	Annualized Incidence Rate per 100000	Relative Risk (95% CI)	P Value
Overall estimates					
Non-MSM	453	92849904	0.14	Reference	
MSM	74	3768102	0.56	4.0 (3.1–5.1)	<.001
HIV-uninfected MSM	26	3290927	0.23	1.6 (1.1–2.4)	.016
HIV-infected MSM	38	477175	2.28	16.3 (11.7–22.7)	<.001

- Facteurs de risque: tabagisme, partenaires multiples & anonymes, discothèques, ...

Folaranmi, T. A., et al. (2017). *Clinical Infectious Diseases* 65(5): 756-763.

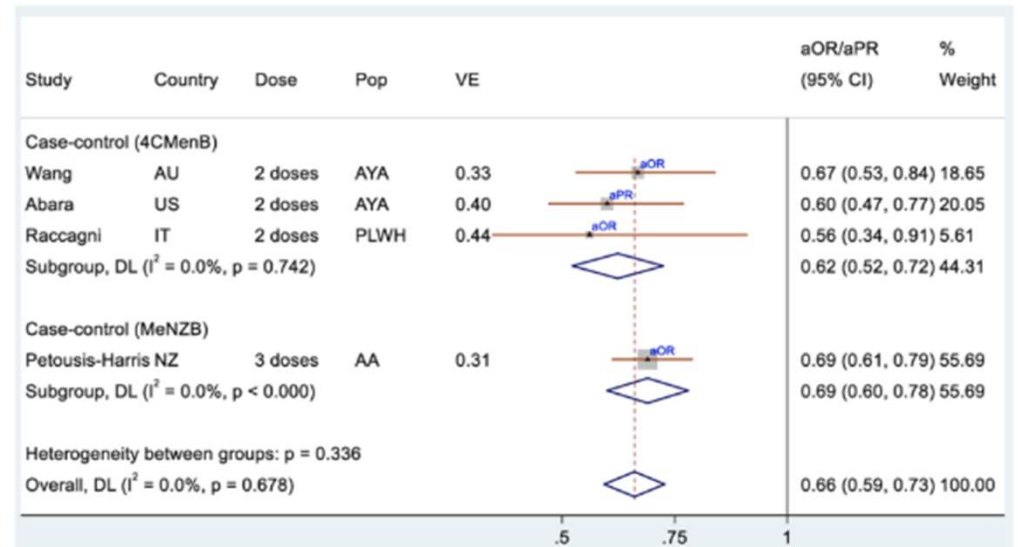
Oliver, S. E. and S. A. Mbaeyi (2018). *Current Epidemiology Reports* 5(4): 321-330.



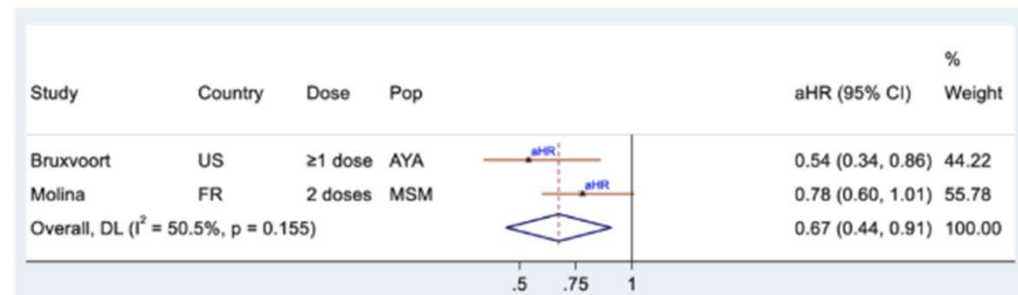
Vaccin méningocoque B >< gono



Vaccin méningocoque B >< gono



B. Cohort studies (4CMenB only)



Wang, B., et al. (2024). *Journal of Infection* **89(3)**: 106225.



Vaccin méningocoque B >< gono

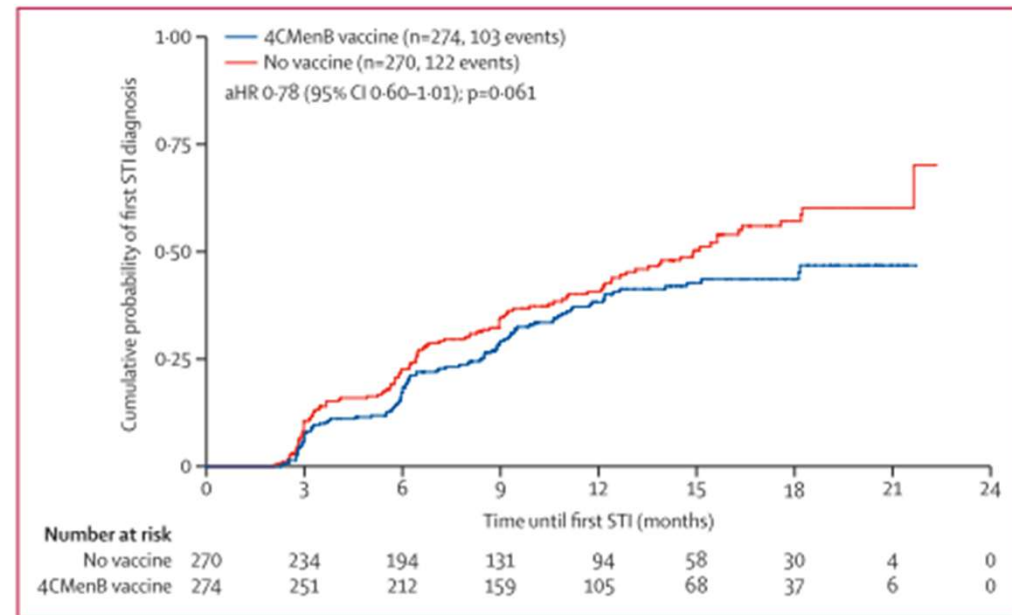
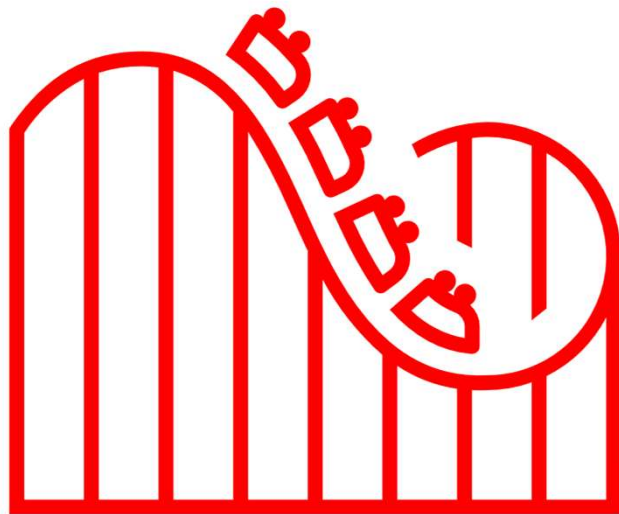


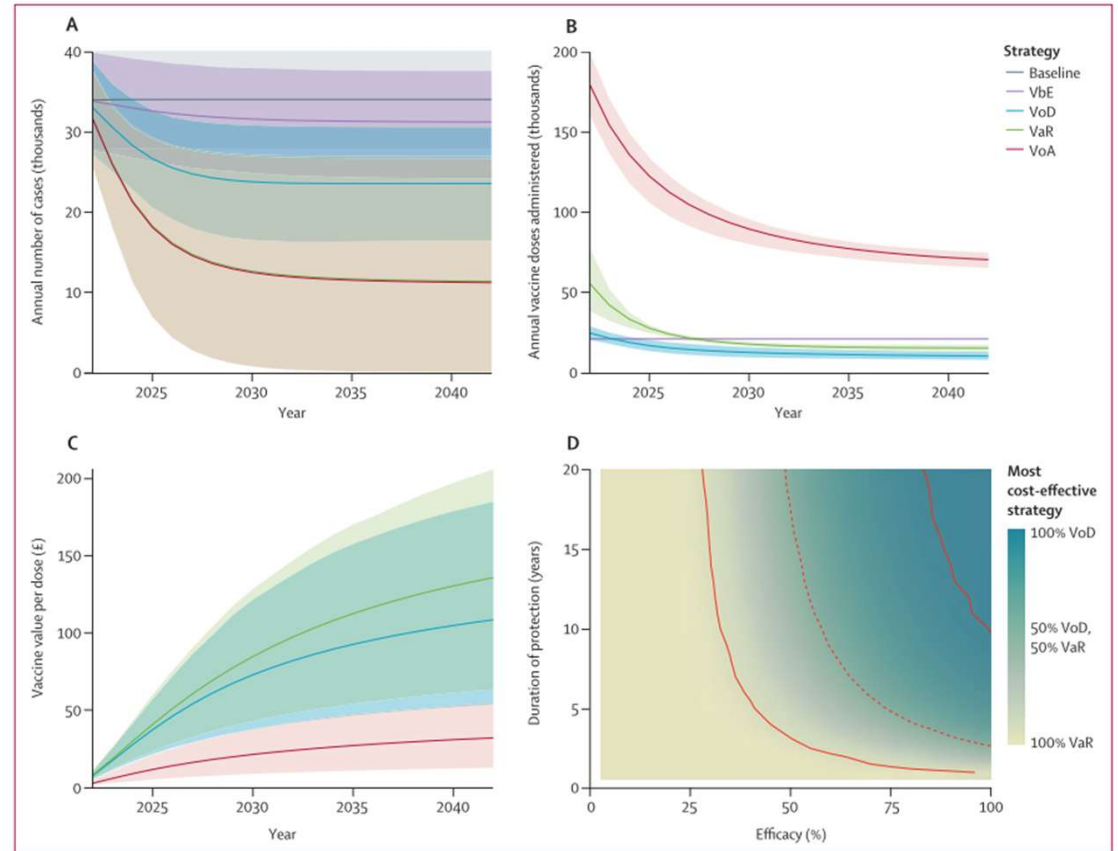
Figure 3: Kaplan-Meier analysis of the probability of the first episode of gonorrhoea in the modified intention-to-treat population

The analysis started at month 3 (ie, 1 month after the second dose of the 4CMenB vaccine). aHR=adjusted hazard ratio. STI=sexually transmitted infection.

Molina, J.-M., et al. (2024). The Lancet Infectious Diseases.



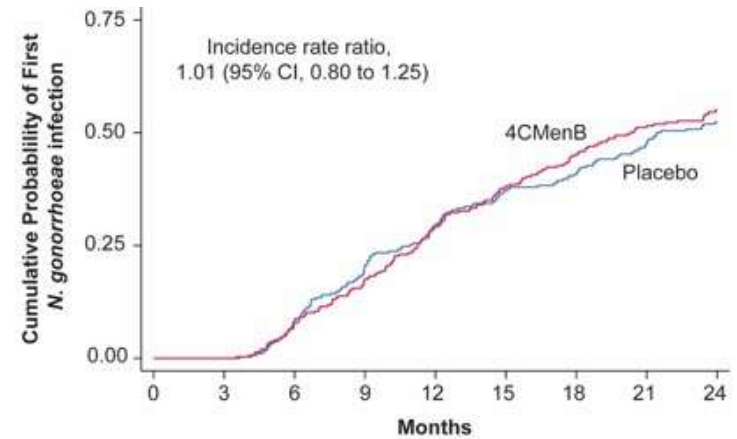
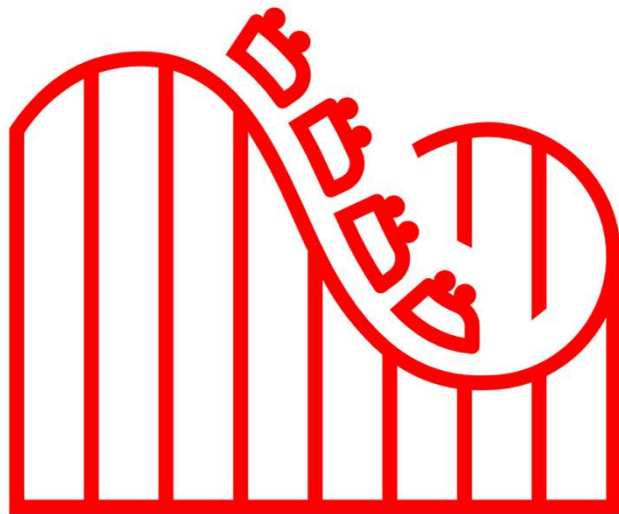
Vaccin méningocoque B >< gono



Whittles, L. K., X. Didelot and P. J. White (2022). *The Lancet Infectious Diseases* **22(7)**: 1030-1041.



Vaccin méningocoque B >< gono



No. at Risk	
4CMenB	296 296 272 241 206 180 155 136 76
Placebo	291 291 268 231 199 172 162 142 86

No. of Cases	
4CMenB	0 24 28 34 25 21 18 9 1
Placebo	0 23 36 27 21 10 19 12 7

Figure 1. Kaplan–Meier Estimate of Time to First-Episode *Neisseria gonorrhoeae* Infection in the per-protocol population. The analysis started at month 4 (i.e., 1 month after the second dose of the 4CMenB vaccine or the placebo). The number of individuals at risk and the number of events are presented for each group at each time point.

Seib, K. L., et al. (2026). Conference on Retroviruses and Opportunistic Infections (CROI 2026), Denver, CO.



Bacteria	Important health problem	Natural history understood	Recognisable early stage	Suitable test	Effective treatment	Early detection improves outcome	Favourable benefit–harm balance
<i>Neisseria gonorrhoeae</i>	Moderate (PID, epididymitis, infertility, dissemination rare)	Frequent carriage, frequent spontaneous clearance [17]	Yes, but poor prediction of complications	Yes, NAAT on genital/extragenital sites	Yes, however options are limited by increasing AMR	No robust evidence showing impact on prevalence/complications; MSM screening shows no impact of screening [18,19]	No: high costs, antibiotic consumption, stigma; uncertain population benefit
<i>Chlamydia trachomatis</i>	Moderate (PID, infertility, reactive arthritis; rare dissemination)	Frequent carriage, frequent spontaneous clearance [17]	Yes, but poor prediction of complications	Yes, NAAT feasible	Yes	No robust evidence showing impact on prevalence/complications [18–20]	No: high costs and antibiotic consumption; stigma; uncertain population benefit
<i>Streptococcus pneumoniae</i>	High (IPD: sepsis, meningitis, pneumonia; esp. children/elderly)	Common carriage in adults (17%) [3]; may be prolonged (up to 292 days [21]) rare progression; serotype-dependent	Carriage detectable but not predictive of infection [6]; potential of invasive disease varies according to serotype	Culture or NAAT feasible	Yes (carriage eradication)	No evidence	Unfavourable: high carriage but rare severe events; not recommended even in high-risk groups for IPD
<i>Neisseria meningitidis</i>	High (fatal meningitis/bacteraemia case fatality ~10%)	Common carriage (up to 25% [12,22]); carriage higher with certain behaviours [23] most clear spontaneously; prerequisite for disease	Carriage detectable; no ‘premeningitis’ stage identifiable; specific clones associated with higher invasive potential [15,24]	Culture or NAAT feasible	Yes (single-dose prophylaxis)	No evidence for population screening; only close contacts treated without screening [15,24]	Unfavourable: number needed to treat most likely very high; explicitly not recommended even in high-risk groups [15]
<i>Streptococcus pyogenes</i>	High (pharyngitis common; scarlet fever invasive disease)	Frequent carriage (15–27% outbreaks in children [9]); most clear <1 wk [25]	Carriage detectable, not predictive of invasive disease [8]; risk of invasive disease varies according to emm-type	Culture or antigen rapid test feasible	Yes (but not recommended for asymptomatic carriers) [8]	No evidence carrier screening prevents invasive disease (no/limited evidence on efficacy [10,11])	Unfavourable: short carriage duration, low invasive risk; not recommended; antibiotic side effects reported [11]

Dauby, N. and T. Vanbaelen (2026). *CMI Communications*: 105186.



Conclusions

- Dépistage Ng/Ct
 - Plus systématique chez les HSH
 - Pas d'augmentation des infections symptomatiques
 - Diminution de la consommation d'antibiotiques
 - (Diminution de la résistance Ng/Mgen)
- DoxyPEP:
 - Pas de prescription systématique
 - Etudes en cours
- Vaccination Méningocoque
 - ?









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Merci!

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