

## **Trends in bacterial STI diagnoses among gay and bisexual men before and after emergent doxyPEP guidance**

### **Authors:**

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### **Background:**

Doxycycline post-exposure prophylaxis (doxyPEP) reduced bacterial STI incidence among gay and bisexual men (GBM) in clinical trials. The ASHM doxyPEP consensus statement released in September 2023 recommended prescribing doxyPEP to GBM with recent STIs. We evaluated changes in STI diagnoses among GBM following the release of doxyPEP trial findings and national prescribing recommendations.

### **Methods:**

We analysed testing data on GBM attending GP and sexual health services in the ACCESS surveillance network (n=27) from January 2022-December 2024. Interrupted time-series analyses of monthly new infectious syphilis, chlamydia and gonorrhoea diagnoses estimated trends in three periods (period 1=January 2022-April 2023, period 2=May 2023-September 2023, and period 3=October 2023-Decemebr 2024) delineated by two interruptions: April 2023 [prominent RCT findings highlighting doxyPEP efficacy] and October 2023 [ASHM doxyPEP recommendations released]. We estimated the relative change in diagnoses in December 2024 due to doxyPEP guidance by comparing the fitted value of observed data (period 3 trend) with the expected value under the counterfactual of no doxyPEP guidance (period 1 trend).

### **Results:**

Overall, 8,075 syphilis, 40,773 chlamydia and 36,074 gonorrhoea infections were diagnosed among 36,027 GBM. Monthly syphilis diagnoses increased in period 1 by 1.6/month ( $P=0.049$ ), declined by 7.7/month in period 2 ( $P=0.022$ ), and were stable in period 3 ( $\beta=1.3/\text{month}$ ,  $P=0.106$ ). Chlamydia diagnoses were stable in periods 1 ( $\beta=6.1$ ,  $P=0.264$ ) and 2 ( $\beta=0.0$ ,  $P=0.998$ ), and declined by 19.2/month in period 3 ( $P=0.001$ ). No significant trends in gonorrhoea were detected. The estimated change in diagnoses in December 2024 from expected to observed data was 199 to 94 for syphilis (52.7% lower,  $P<0.001$ ), 910 to 548 for chlamydia (39.8% lower,  $P<0.001$ ), and 669 to 676 for gonorrhoea (non-significant).

**Conclusion:**

Diagnoses of syphilis and chlamydia declined following the release of doxyPEP prescribing guidance. These ecological data suggest doxyPEP may be having an impact on population-level STI incidence among GBM attending sexual health clinics.

**Disclosure of Interest Statement:**

M Traeger has received consulting fees from Gilead Sciences Ltd.