

# Pharyngeal *Chlamydia trachomatis* (PCT): temporal trends and association with anogenital infections among men who have sex with men (MSM) attending Australian sexual health clinics, 2014-2019

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**Background:** The rapid uptake of HIV pre-exposure prophylaxis (PrEP) among Australian MSM in recent years corresponded with a decline in condom use for penile-anal intercourse. Given that condoms have rarely been used for oral sex in MSM, we hypothesised that the decline in condom use for anal sex would lead to fewer “isolated” PCT infections (i.e. those negative at both anogenital sites) since pre-PrEP studies were undertaken.

**Methods:** The Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) dataset was analysed for visits at publicly-funded sexual health clinics (PFSHCs) by MSM between 1/1/14 and 31/12/19. Generalised estimating equations were used to identify temporal trends in PCT test positivity and proportion of isolated infections.

**Results:** 356,066 visits involving chlamydia testing were made by 111,736 unique MSM. The median age of patients was 31 years (IQR:26-40). The overall positivity for all chlamydia tests undertaken was 5.52% (95%CI:5.48-5.57). PCT positivity was 1.81% (95%CI:1.76-1.86), rectal chlamydia positivity was 8.18% (95%CI:8.08-8.28) and urethral chlamydia positivity was 6.62% (95%CI:6.53-6.71). PCT positivity increased over the study period, with odds increasing by 1.06 per year (95%CI:1.04-1.08). Of visits where 3-site testing took place, the proportion of all PCT infections detected which occurred only in the pharynx increased from 39/211 infections (18.5%) in 2014 to 255/909 infections (28.1%) in 2019 (per-year OR:1.16; 95%CI:1.10-1.22). Overall, isolated PCT was found at 861/223,676 3-site testing visits (0.38%; 95%CI:0.36-0.41).

**Conclusion:** As far as we are aware, this is the largest study that has investigated temporal trends in PCT positivity and isolated infections. We found increasing PCT positivity in Australian MSM attending PFSHCs. Isolated PCT appears to be increasing in the PrEP era. Nonetheless, the low proportion of isolated PCT overall raises questions regarding routine PCT testing in an era of increasing focus on antimicrobial stewardship, when the clinical significance of this finding remains uncertain.

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