

IMPROVING DIAGNOSIS OF CT/NG AMONG PREP USERS WITH MULTIPLE SITE SCREENING

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Most CT/NG infections detected among PrEP users are *asymptomatic* and occur in *extragenital* sites. Restricting investigation to urine samples or to symptomatic users only severely impacts the diagnostic sensitivity of CT/NG molecular screening

BACKGROUND

- PrEP users are under **high risk of bacterial sexually transmitted infections (BSTI)**.
- Sensitive and timely diagnostic strategies are crucial to allow rapid prescription of antimicrobial treatment.
- Several studies have shown that *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) **molecular screening at multiple anatomic sites** may improve the diagnostic yield in high-risk populations.
- However, most health facilities in Brazil still lack molecular testing tools or restrict screening to urine samples in asymptomatic PrEP users.

METHODS

- Retrospective cohort study including PrEP users with at least 2 clinic visits, followed through Jan/2018 to Nov/2019 in São Paulo, Brazil.
- We performed periodic serologic testing of Syphilis (every 3 months) and **molecular testing for CT/NG at genital, anorectal and oropharyngeal sites (every 6 months in asymptomatic patients; as needed for those with symptoms)**.
- We present **baseline prevalences** of Syphilis, CT and NG as well as the **cumulative incidences at 12 months after PrEP initiation** using Kaplan-Meier survival analysis.
- We also describe the frequency and percentage of CT/NG detection per anatomical site and calculate the **percentage of missed diagnosis if molecular testing for CT/NG were applied only for symptomatic patients, or if screening is done in urine only**.

ADDITIONAL KEY INFORMATION

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RESULTS

- Population:**
- 413 PrEP users with median age was 31 years old (range 18-67) were included; 72% were white/Caucasian; 88% had ≥12 years of education and 96% were MSM.
- BSTI at baseline:**
- Active syphilis was detected in 28 participants (7%; 6 symptomatic and 22 latent or unknown stage);
 - CT and NG were detected in 13 and 11 patients, respectively.
- BSTI incidence after PrEP initiation:**
- After a median follow-up of 399 days (IQR 265-517), incident syphilis was detected in 39 PrEP users, with a cumulative incidence of 13,4% at 12 months.
 - CT was detected in 20 patients (4 in oropharyngeal swab, 6 in urine, 8 in anal swab and 2 in both anal and oropharyngeal swabs), with a cumulative incidence of 11,4% at 12 months.
 - NG was detected in 15 patients (3 in oropharyngeal swab, 3 in urine, 5 in anal swab and 4 in both anal and oropharyngeal swabs), with a cumulative incidence of 8,9% at 12 months
- Percentage of missed diagnosis expected with incomplete CT/NG screening (Figure 3):**
- Had CT/NG molecular testing been used for **symptomatic patients only**, all 22 cases (100%, 95% CI 84-100) would have been missed at baseline and 30/33 (90%; 95% CI 75-98) incident cases would have been missed.
 - Had molecular screening been done in **urine only**, 17/22 (77%; 95%CI 54-92) cases would have been missed at baseline and 23/33 (69%; 95%CI 51-84) incident cases would have been missed.

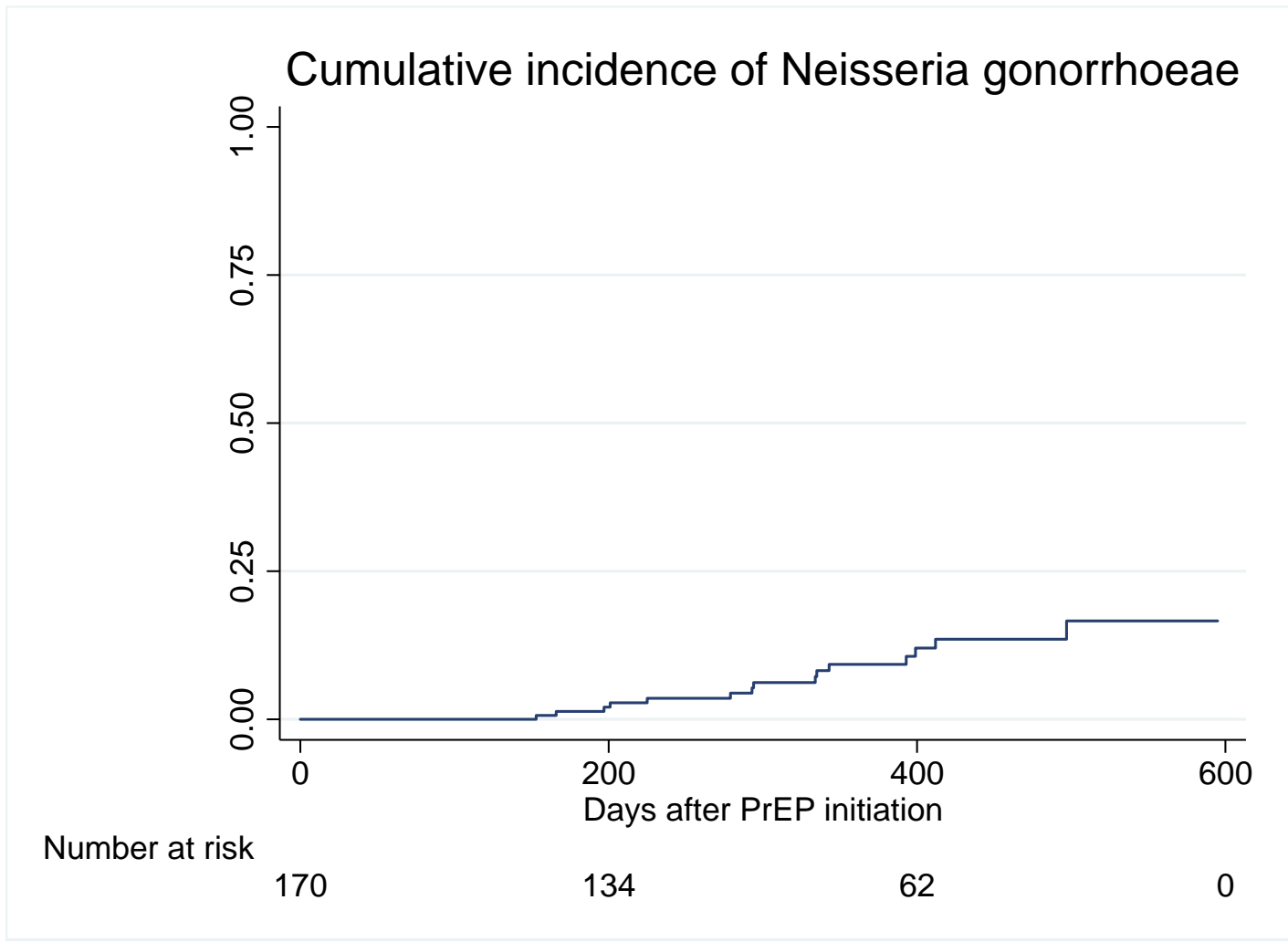


Figure 1: Cumulative incidence of NG among PrEP users

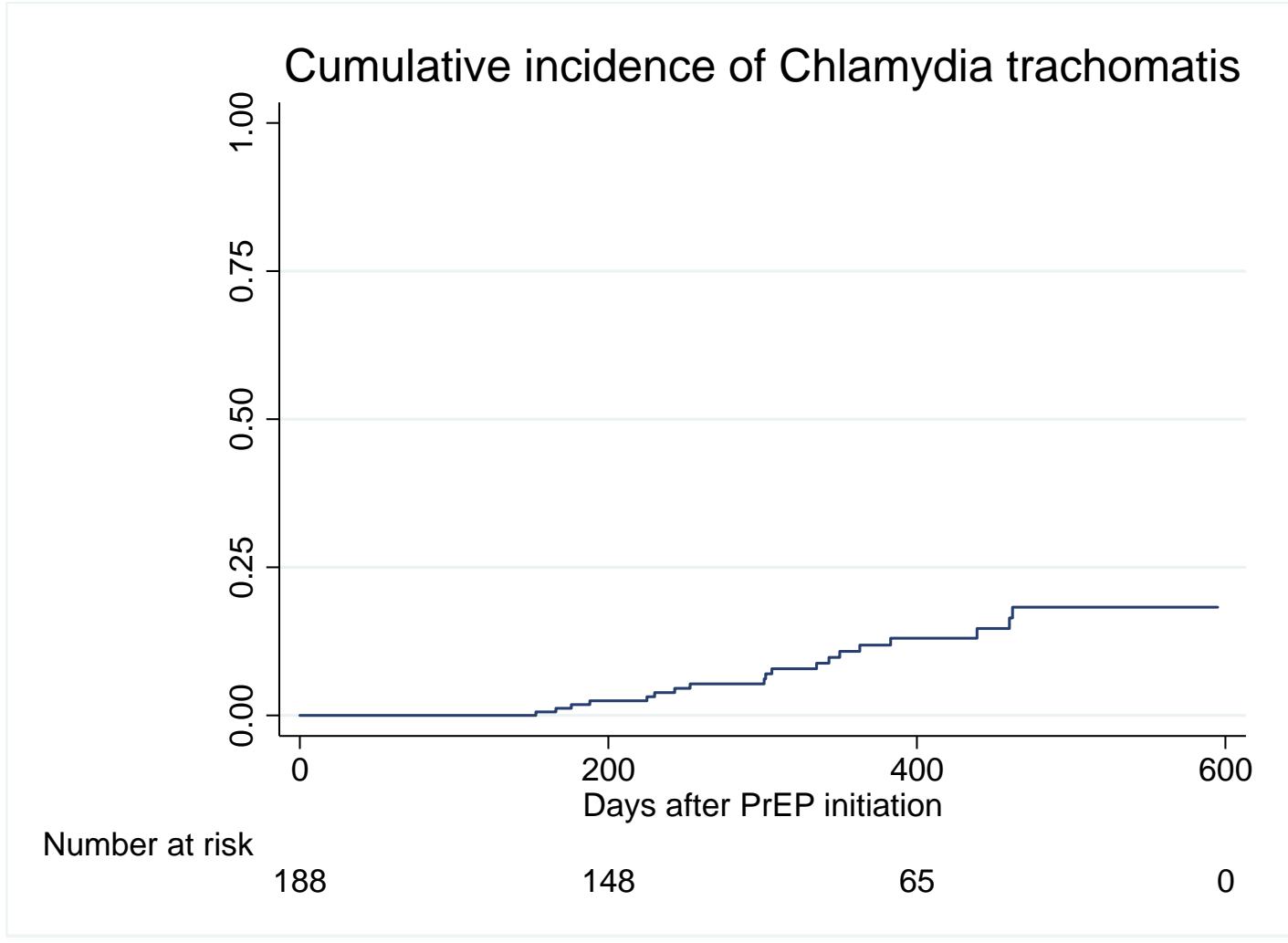


Figure 2: Cumulative incidence of CT among PrEP users

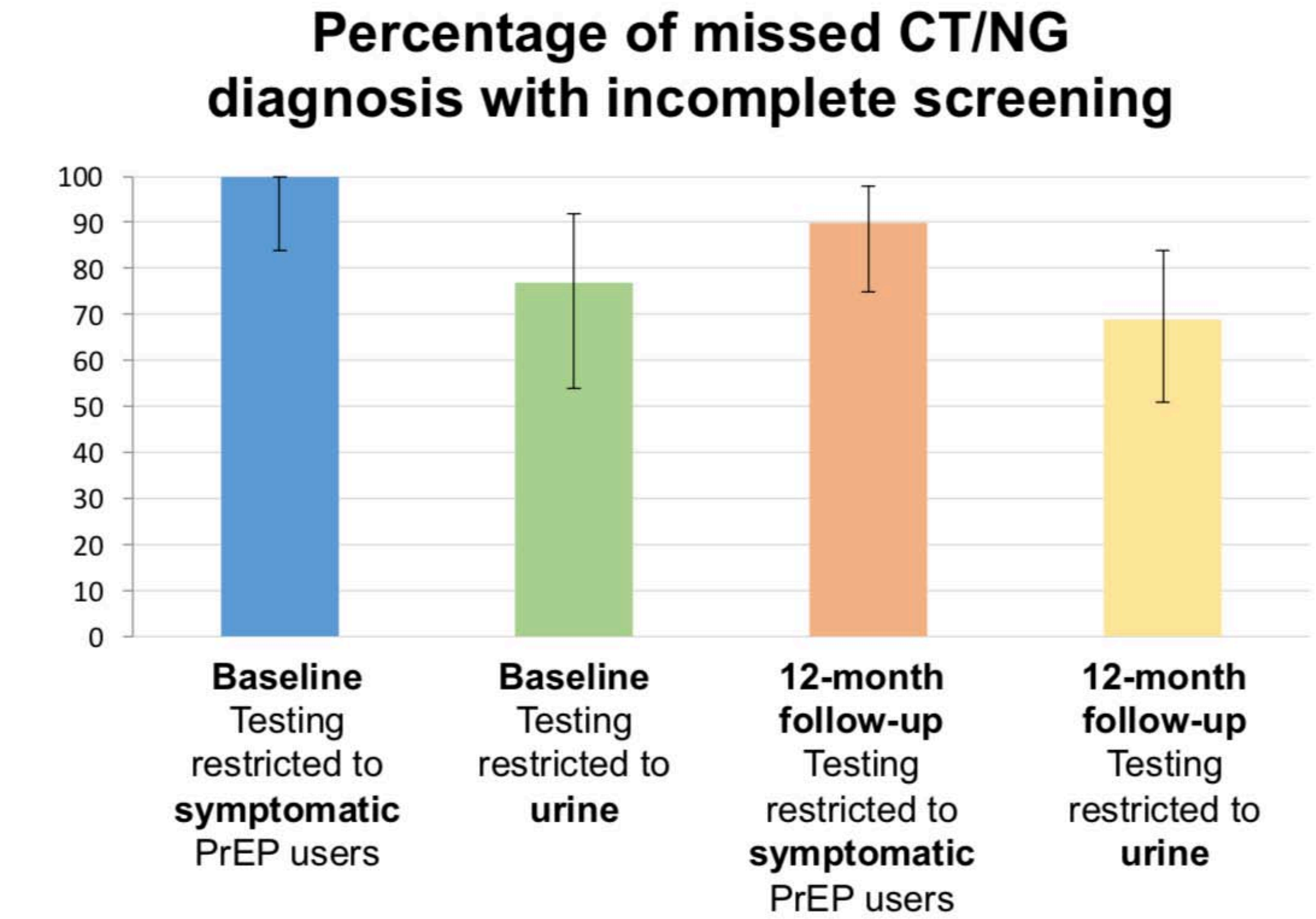


Figure 3: Percentage of missed CT/NG diagnosis expected with incomplete molecular screening

CONCLUSIONS

- **Multiple anatomic site sampling** is a powerful strategy to improve the diagnostic sensitivity of CT/NG molecular screening.
- This approach should be applied to asymptomatic PrEP users as to improve the capacity of accurate and timely diagnosis and treatment of BSTI
- Improving diagnosis is an essential step to **help eliminate the chain of BSTI transmission among key and vulnerable populations**.