ECONOMIC EVALUATION ALONGSIDE A CLINICAL TRIAL OF NEAR-TO-PATIENT TESTING FOR SEXUALLY TRANSMITTED INFECTIONS

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Background:
Current clinical care for common bacterial STIs (*Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG) and *Mycoplasma genitalium* (MG)) involves empiric antimicrobial therapy when clients are symptomatic, or if asymptomatic, waiting for laboratory testing and recall if indicated. Near-to-patient testing (NPT) can improve pathogen-specific prescribing and reduce unnecessary or inappropriate antibiotic use in treating sexually transmitted infections (STI) by providing same-day delivery of results and treatment.

Methods:
We compared the economic cost of NPT to current clinic practice for managing clients with suspected proctitis, non-gonococcal urethritis (NGU), or as an STI contact, from a health provider's perspective. With a microsimulation of 1,000 clients, we calculated the cost per client tested and per STI- and pathogen- detected for each testing strategy. We also imposed an antimicrobial resistance (AMR) tax to determine whether this measure could impact the cost-effectiveness of testing strategies. Sensitivity analyses were conducted to assess the robustness of the main outcomes. Costs are reported as Australian dollars (2023).

Results:
In the standard-of-care arm, cost per client tested for proctitis, NGU in men who have sex with men (MSM) and heterosexual men were the highest at $247.96 (95%Prediction Interval(PI): 246.77–249.15), $204.23 (95%PI: 202.70–205.75) and

$195.01 (95% PI:193.81–196.21) respectively. Comparatively, in the NPT arm, it costs $162.36 (95%PI:161.43–163.28), $158.39 (95%PI:157.62–159.15) and $149.17 (95%PI:148.62–149.73), respectively. Using NPT resulted in cost savings of 34.52%, 22.45% and 23.51%, respectively. Among all the testing strategies, substantial difference in cost per client tested between the standard-of-care arm and the NPT arm was observed for contacts of CT or NG, varying from 27.37% to 35.28%. In our sensitivity analysis, AMR tax was the most influential cost driver in all the strategies.

Conclusion:
We found that NPT is cost-saving compared with standard clinical care for individuals with STI symptoms and sexual contacts of CT, NG, and MG.

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