EVALUATION OF A SPECIMEN POOLING METHOD FOR MOLECULAR POINT-OF-CARE DETECTION OF CHLAMYDIA AND GONORRHOEA

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Introduction:
The aim of the study was to evaluate the performance of pooled self-collected urogenital, pharyngeal and anorectal specimens compared to individual samples for the detection of *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) at the point-of-care (POC).

Methods:
Clients aged 16 years and over attending urban, peer-led community testing services were offered CT/NG molecular POC testing using GeneXpert (Cepheid, Sunnyvale, CA). With consent, participants provided three self-collected specimens (urine, pharyngeal and rectal swabs) for testing. If any specimen provided a positive result, all three specimens were pooled and retested. Results of the pooled test were compared against individual test results to determine agreement between the two methods

Results:
In total 387 participants provided three individual anatomical specimens with 75 (19.4%) participants having infection detected in at least one individual specimen. For the detection of CT, the positive percent agreement (PPA), negative percent agreement (NPA) and overall rate of agreement (ORA) of pooled testing compared to individual testing was 91.8% (95% CI 79.5-97.4), 100% (95% CI 89.9-100) and 94.7% respectively (Cohens kappa (κ)=0.886 (0.778-0.994). For NG, the PPA, NPA and ORA was 92.1% (95% CI 77.5-97.9), 100% (95% CI 88.3-100) and 97.3% respectively (κ=0.920 (0.832-1)). Agreement varied by anatomical site and organism type, with pharyngeal samples with low microbial loads less likely to be detected on pooling. Additional experimentation suggested false negative results could be minimised by adjusting sample volumes in the pool.

Conclusion:
This study confirmed people accessing community based services for POC testing have a high prevalence of undiagnosed CT (13.7%) and NG (10.3%). Based on the these results further research is warranted to determine if the agreement of the pooling method can be improved and a clinically acceptable level of detection reached. If achieved, significant costs would be saved when screening at risk populations at the POC.

Disclosure of Interest Statement:
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No conflicts of interest declared.