

# Evaluating the costs, benefits and cost-effectiveness of multi-pathogen point-of-care tests for sexually transmitted infections in symptomatic genitourinary medicine clinic attendees



Harding-Esch EM<sup>1,2</sup>, Huntington SE<sup>3</sup>, Burns RM<sup>3</sup>, Harvey M<sup>3</sup>, Hill-Tout R<sup>4</sup>, Fuller SS<sup>1</sup>, Adams EJ<sup>3</sup>, Sadiq ST<sup>1,3</sup>

<sup>1</sup> Applied Diagnostic Research and Evaluation Unit, St George's, University of London (+44 2087252886); <sup>2</sup> Public Health of England, London; <sup>3</sup> Aquarius Population Health, London; <sup>4</sup> St George's University Hospitals NHS Foundation Trust, London.

## Background

- Point-of-care tests (POCTs) for sexually transmitted infections (STIs) may improve Sexual Health Clinic (SHC) care pathway efficiencies and patient outcomes<sup>1</sup>.
- Nucleic acid amplification test (NAAT) POCTs, which simultaneously test for multiple pathogens, are currently being developed<sup>2</sup>.
- We estimated costs, benefits and cost-effectiveness of three accurate 30-minute NAAT POCT strategies that detect different STI combinations, compared with standard care (SC) (laboratory-based NAAT for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG)).**

## Results

- Micro-costing: SC was the cheapest strategy costing £113,058,655.
- Tariff costing: POCT C was the cheapest strategy costing £145,912,757.
- All POCT strategies provided more benefits than SC.

## POCT C

- Dominating SC for all secondary outcomes.
- Was most cost-effective POCT strategy relative to SC with ICER of £36,585 per QALY gained (micro-costing).
- Cost-effectiveness acceptability curves (CEACs) (Figure 1) illustrated the probability of cost-effectiveness given a range of willingness to pay (WTP) thresholds per QALY gained. CEACs indicated that different strategies may be cost-effective for different patient sub-groups (women, men-who-have-sex with women (MSW), men-who-have-sex with men (MSM)), depending on the WTP threshold.
- Scenario analyses showed that cost was most affected by amount of presumptive treatment given and POCT unit cost.

## References

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- Herbst de Cortina S *et al.* (2016) *Infect Dis Obstet Gynecol* 2016: 4386127.
- Public Health England (2016) [www.gov.uk/government/statistics/sexually-transmitted-infections-stis-annual-data-tables](http://www.gov.uk/government/statistics/sexually-transmitted-infections-stis-annual-data-tables)

## Methods

- Decision tree model to simulate a hypothetical cohort of 965,988 patients symptomatic for lower genitourinary tract infection, estimated from real data<sup>3</sup>.
- POCT strategies compared to SC were:
  - CT and NG
  - CT-NG and *Mycoplasma genitalium* (MG)
  - CT-NG-MG and *Trichomonas vaginalis* (TV)
- SHC costs considered were for:
  - Delivery of testing and management (i.e. costs to SHC; micro-costing approach)
  - Reimbursement (tariff) based on attendance (i.e. cost to commissioners)
- Primary outcomes were: i) total cost; ii) benefits (i.e. Quality Adjusted Life Years (QALYs)); iii) incremental cost-effectiveness ratios (ICERs).
- Secondary outcomes: i) inappropriate treatment of STIs; ii) onward transmission; iii) PID in women; iv) time to cure; v) total attendances.

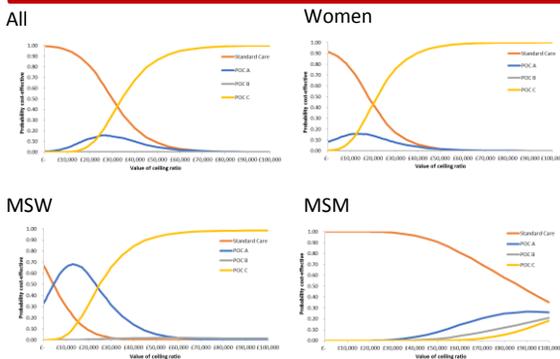


Figure 1. CEACs: POCT vs SC

## Conclusions

- The CT-NG-MG-TV POCT strategy was the cheapest using tariff costing. It offered the most benefits, which in turn may have wider public health impacts through rapid and accurate STI diagnosis and management.
- Different testing strategies may be more cost-effective in different SHCs and patient groups, but whether this is practical and/or acceptable requires further investigation.
- Further evidence is needed to capture the diversity of STI prevalence and management of patients across clinical services to better inform economic analyses.

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