**Title:** Targeted point-of-care testing compared to syndromic management of urogenital infections in Rwandan women.

**Submission category:** Clinical Science

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**Background:** Sexually transmitted and urogenital infections are typically managed by World Health Organisation (WHO)-recommended syndromic algorithms in resource-poor countries. Vaginal discharge (VDS) and lower abdominal pain (LAP) algorithms in women perform poorly. The main aim of the WISH study was to compare the performances of VDS/LAP algorithms incorporating point-of-care tests (POCTs), and of WHO syndromic algorithms, with gold standard test results.

**Methods:** At-risk Rwandan women (N=705) underwent POCTs for bacterial vaginosis (BV; vaginal pH≥5·0) and *Trichomonas vaginalis* (TV; OSOM) regardless of symptom-reporting. Women with a positive risk score were POC-tested for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* (CT/NG; GeneXpert). Vulvovaginal candidiasis (VVC) was treated presumptively. Nucleic acid amplification tests (NAATs) were done for CT/NG, TV, BV, and VVC on everyone and were used as gold standards.

**Results:** NAAT-based prevalences were: 60/705 (8·5%) CT, 50/705 (7·1%) NG, 111/690 (16·1%) TV, 125/690 (18·1%) BV, and 59/690 (8·6%) VVC. Infection-specific sensitivities of the WHO VDS/LAP algorithms ranged from 58·3-74·6%, and specificities from 44·7-50·6%. WISH POCT-based algorithms had good sensitivity (68·5-76·0%) and specificity (97·4-100%) for CT, NG, and TV but low specificity for BV (41·2%; sensitivity 95·2%), and modest sensitivity (64·4%) and specificity (69·4%) for VVC. Sensitivity (73·6%) and specificity (100%) for BV improves by screening all women for vaginal pH, and confirmatory testing of those with pH≥5·5 (n=275). Speculum/bimanual examinations by a physician had limited added value (except in the case of LAP), and partner notification was suboptimal. Staff and participants considered POC testing feasible and acceptable.

**Conclusion:** POC testing for urogenital infections in women improves performance and is feasible in resource-poor settings. The WHO VDS/LAP algorithms should therefore recommend POC testing whenever feasible. However, programmes would benefit from more affordable combined CT/NG POCTs, and POCTs combining BV, TV, and VVC diagnoses. Additional studies in other populations, including low prevalence populations, are warranted.

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