

findings also demonstrate the benefits of using molecular testing to complement phenotypic NG AMR surveillance.

Disclosure of interest statement Nothing to Declare.

001.6 EXPLORING THE BENEFITS OF MOLECULAR TESTING FOR GONORRHOEA ANTIBIOTIC RESISTANCE SURVEILLANCE IN REMOTE SETTINGS

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Background The latest nucleic acid amplification tests (NAAT) for gonorrhoea are convenient and accurate, and are often used in place of culture-based tests for diagnosis. However the increasing use of NAATs in remote settings in Australia has compromised surveillance for gonorrhoea antimicrobial resistance (AMR). A molecular resistance test that can make use of samples collected for NAAT diagnosis may provide a means to enhance surveillance in remote settings where the availability of samples suitable for culture-based AMR testing is declining. We used a mathematical model to assess the potential benefit of a molecular test in terms of the timeliness of detection of gonorrhoea AMR.

Methods An individual-based mathematical model was developed to describe the transmission of gonorrhoea in a remote Indigenous population in Australia. We estimated the impact of the molecular test on the time delay between first importation and the first confirmation that the prevalence of gonorrhoea AMR has breached the WHO-recommended 5% threshold (when a change in antibiotic should occur).

Results The model suggests that when culture is the only means of testing for AMR, the breach will only be detected when the actual prevalence of AMR in the population has already reached 8 – 18%. With the addition of a molecular AMR test and assuming AMR can be determined for all samples, the breach will be detected when the actual prevalence of AMR in the population has reached 6%, which only slightly exceeds the recommended notification threshold of 5%.

Conclusion Molecular tests have the potential to provide more timely warning of the emergence of gonorrhoea AMR in remote settings where surveillance is compromised by the increased use of NAATs for diagnosis. This in turn will facilitate earlier treatment switching and more targeted treatment, which has the potential to reduce the population impact of gonorrhoea AMR.

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002 - Point-of-care STI diagnosis

002.1 POINT-OF-CARE TESTING AND IMMEDIATE TREATMENT OF CURABLE SEXUALLY TRANSMITTED AND GENITAL INFECTIONS AMONG ANTENATAL WOMEN IN PAPUA NEW GUINEA

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Background *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG), *Trichomonas vaginalis* (TV) and bacterial vaginosis (BV), are associated with adverse maternal and neonatal health outcomes, particularly preterm birth and low birth weight. These infections are highly prevalent in many low-income settings but remain undiagnosed and therefore untreated in pregnancy because of a lack of suitable diagnostic technology. In 2014, we conducted the first feasibility study of newly-available, easy to use and highly-accurate point-of-care (POC) STI assays in a routine clinical setting in Papua New Guinea (PNG) in preparation for a large-scale field trial to evaluate the potential of this strategy to improve pregnancy outcomes.

Methods Women aged 18–35 years attending their first antenatal visit were invited to participate. Following informed consent procedures, women completed a short interview, obstetric examination, and provided self-collected vaginal specimens for clinic-based STI testing, conducted by trained clinic staff: CT/NG and TV were tested using the Cepheid GeneXpert platform, and BV tested using the BVBlue Test. Participants were provided with same-day POC test results, and antibiotic treatment as indicated. Women were also provided routine onsite antenatal HIV and syphilis screening.

Results A total of 125 women were enrolled. The prevalence of CT was 20.0%; NG, 11.2%; TV, 37.6%; BV 18.4%; and more than half (67/125) had one or more of these infections. Over 70% of those with a POC-confirmed STI would not have been detected on clinical grounds alone. The prevalence of HIV was 1.6% and active syphilis, 4.0% in this population. All women with an STI and their sexual partners were successfully treated.

Conclusion Antenatal POC STI testing and treatment proved feasible in an antenatal setting in PNG. If this strategy is proven to be effective in our future field trial (2015–18), it has the potential to improve pregnancy outcomes in all high-burden, low-income countries worldwide.

Disclosure of interest statement Nothing to Disclose