(126/1248) and at the reference laboratory using TPHA was 7.7%. Active syphilis was found in 1.6% of the samples.

Conclusion Midwives can conduct POC testing for syphilis for ANC clients in rural settings in Ghana even in primary level health facilities. The ability of midwives to identify, treat 75% of HTS and provide a high coverage of syphilis screening in a rural setting makes this a suitable strategy for resource-constrained settings.

The low sensitivity compared to TPHA and active syphilis, should be addressed with training, effective supervision and monitoring of health personnel and instituting quality assurance systems for testing.

022.2 DIRECT AND INDIRECT EFFECTS OF SCREENING FOR CHLAMYDIA TRACHOMATIS ON THE PREVENTION OF PELVIC INFLAMMATORY DISEASE: MATHEMATICAL MODELING STUDY

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Background Pelvic inflammatory disease (PID) results from the ascending spread of microorganisms, including *Chlamydia trachomatis*, to the upper genital tract. The timing of ascending infection is unknown. Screening can prevent PID either by identifying and treating infections before they progress (direct effect) and/or reducing chlamydia transmission (indirect effect). We did this study to examine the contributions of direct and indirect effects of a screening intervention, using different assumptions about the timing of progression from chlamydia infection to PID.

Methods We developed a compartmental model of chlamydia transmission in a heterosexual population of 16–25 year olds with two sexual activity classes. The model explicitly incorporates the progression from chlamydia to clinical PID. Behavioural parameters are informed by a British population-based. We studied the effects of chlamydia screening introduced at low levels but with coverage increasing to 40% after ten years. We estimated the numbers of PID cases prevented and the proportions prevented by direct and indirect effects.

Results At baseline, the cumulative probability of developing PID by age 25 years was 3.1%. After five years, screening prevented a total of 187 PID cases per 100,000 women. Most PID cases were initially prevented by interruption of progression to PID (direct effect). The indirect effect produced a small net increase in PID cases early on, which was outweighed by the effect of reduced chlamydia transmission after 2.2 years. The later that progression to PID occurs, the greater the contribution of the direct effect.

Conclusion The ratio of direct to indirect effects depends on the timing of progression from chlamydia infection to PID. Mathematical modelling has helped to understand the mechanisms of chlamydia screening programmes by showing that there are separate roles for direct and indirect PID prevention and potential harms of screening, which could not have been observed by empirical studies.

022.3 TEXTING IMPROVES NOTIFICATION OF SEXUALLY TRANSMITTED INFECTION RESULTS AFTER EMERGENCY DEPARTMENT VISITS

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Background Failure to communicate sexually transmitted infection (STI) results to emergency department (ED) patients is a barrier to appropriate STI treatment. We aimed to improve the proportion of female adolescent ED patients who are notified of positive STI tests (gonorrhoea, Chlamydia, or trichomoniasis) using mobile phone calls and texting.

Methods A randomised intervention among 14–21 year-old females using a 2X3 factorial design with replication to improve patient notification, defined as the proportion of STI-positive females notified within 7 days of STI testing. We evaluated six combinations of two factors: (1) method of notification (call, text message, or call + text message) and (2) provision of an STI information card with or without an ED phone number to obtain test results. Covariates for logistic regression included age, empiric STI treatment, days until first contact and documentation of a confidential/mobile phone number.

Results Of 386 patients, 51% were 18–21 years, 35% were 16–17 years and 14% were 14–15 years old. Successful notification was significantly greater for call + text message vs. call only (Odds Ratio [OR] 3.1, 95% confidence interval [CI] 1.4 – 6.7). There was no significant interaction between card and method of notification. Texting only or type of STI information card was not significantly associated with patient notification. Documenting a confidential phone number was independently associated with successful notification (OR 3.3, 95% CI: 1.6–6.9). In total, 94% of those with a documented confidential phone number who received call + text message were notified of their positive STI results within 7 days of their ED visit.

Conclusions A combination of call + text messaging improved our ability to successfully notify adolescent women of their positive STI results after an ED visit. Documentation of a confidential phone number is also an important strategy to notify adolescent women of their STI results.

022.4 WHAT ARE YOUNG PEOPLE'S PERCEPTIONS OF USING ELECTRONIC SELF-TESTS FOR STIS LINKED TO MOBILE TECHNOLOGY FOR DIAGNOSIS AND CARE (ESTI2)?

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Background UK rates of sexually transmitted infections (STI) are sustained or rising, particularly among young people aged 16–24, despite decreases in patient waiting times within traditional services. Modern advances in communication and diagnostic technologies offers the potential of electronic self-testing and diagnosis for STIs (eSTI2), linked to Internet/mobile-App based clinical management and support, which could be accessed wherever people find convenient and safe. We aimed to explore opinions on using eSTI2 among a sample of potential users.

Methods Twenty-five semi-structured interviews were conducted with a purposive sample of sexually active young people aged 16–24 years enrolled in London further education colleges. Analysis was based on the Framework method.

Results Participants were 64% male (n = 16), 36% female (n = 9). Mean age was 19. They described their ethnicity as Black 84% (n = 21), mixed race 12% (n = 3), Asian 4% (n = 1). Including those screened via the National Chlamydia Screening Programme (NCSP), the majority of participants (92%, n = 23) had previously screened for STIs at least once. The young people in our sample were highly conversant in mobile technology but had limited experience of using it to access health-related services. Participants reported struggling between desire to access services out of concern for their sexual health and repercussions from being discovered by family and peers at testing centres. These barriers were seen to be mitigated by using eSTI2. Participants expressed the importance of

eSTI2 being embedded within NHS services, incorporating personal support from clinicians when necessary.

Conclusions Concern around long waits and lack of privacy within traditional settings created a barrier to STI testing for these young people. Electronic self-testing for STIs, linked to Internet/mobile-App based clinical management and support (eSTI2) and embedded within NHS services appears highly acceptable to this group of high-risk young people and could increase their access to STI testing and care.

022.5 PROVIDING DISCRETE AND RELIABLE STD TESTING IN ALASKA VIA A WEB-BASED AT-HOME SERVICE

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Background Alaska has one of the highest rates of *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) in the United States. Alaska Native people, women and youth (ages 15–29) are disproportionately affected. Alaska Native health organisations have jurisdictions over large geographic areas, containing small isolated communities where a perceived lack of confidentiality and privacy is an identified barrier to accessing Sexually Transmitted Disease (STD) testing. The Alaska Native Tribal Health Consortium (ANTHC) has partnered with the *"I Want the Kit"* programme (IWTK) at Johns Hopkins University (JHU) to provide a discrete and reliable STD testing alternative.

Methods Alaska residents 14 years of age and older can request a no-cost STD testing kit online or by phone, which is mailed via U.S. Postal Service. After collection, the kit is returned in a prepaid envelope to JHU where it is tested for Chlamydia, gonorrhoea and Trichomonas. JHU reports all testing results to ANTHC, where a nurse notifies all participants of their results and refers positive cases for treatment. IWTK Alaska focuses its advertising efforts in rural Alaskan areas where the disease burden can be high and the barriers to accessing confidential healthcare are greatest.

Results In 2012, JHU received a total of 439 home testing kit requests from Alaska of which 161 (37%) were returned. Alaska Native and/or American Indian participants comprised 30% and Whites 53% of kits tested; other minority groups made up the remaining 17% of kits tested. The ages of individuals who returned kits ranged from 16 to 63 years, with a median age of 28 years. Among the 161 kits tested, 14 (8.6%) tested positive for Chlamydia, two of these also tested positive for gonorrhoea, and four kits were positive for Trichomonas.

Conclusion This web-based STD testing option increases access to STD testing by alleviating privacy and confidentiality concerns.

022.6 FIELD EVALUATION OF THREE POINT-OF-CARE TESTS FOR CHLAMYDIA AND GONORRHOEA IN REMOTE HEALTH SERVICES IN AUSTRALIA

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Introduction Control of sexually transmissible infections (STIs) can be compromised by delays in time to diagnosis and treatment. Point-of-care (POC) tests can provide results at time of consultation. We conducted field evaluations of three POC tests (one new molecular-based and two best-performing immunochromatographic tests [ICT] identified from preliminary laboratory evaluations) for diagnosis of gonorrhoea (NG) and chlamydia (CT) at selected remote health services in Australia to identify the most suitable device for a larger randomised trial.

Methods Urine specimens collected from patients attending health services for routine STI screening were aliquotted and tested onsite with: GeneXpert® CT/NG (simultaneous detection of CT and NG), Diaquick CT (CT only), and Gonorrhea Card (NG only). We compared results to routine laboratory reference results (commercial nucleic-acid amplification test) and calculated sensitivity (Sn) and specificity (Sp) by standard methods. We assessed selected operational characteristics.

Results For GenXpert (n = 99): Sn and Sp for CT were: 100% (95% confidence interval [CI]: 56.1–100) and 98.9% (CI: 93.1–99.9); for NG: 100% (CI: 56.1–100) and 100% (CI: 95.0–100). For Diaquick (n = 50), Sn and Sp were: 42.9% (CI: 11.8–79.8) and 97.7% (CI: 86.2–99.9). For Gonorrhea Card (n = 15), Sn and Sp were: 66.7% (CI: 12.5–98.2) and 75.0% (CI: 42.8–93.3). Urine volume required: GeneXpert = 1ml; both ICTs = 15ml. Mean preparation time: GeneXpert = 1 minute and ICTs = 18 minutes. Time to result: GeneXpert = 88 minutes, Diaquick = 10 minutes and Gonorrhea Card = 15 minutes. Results from additional evaluation sites occurring in early 2013 will also be presented.

Conclusions The GeneXpert is highly accurate for detection of CT and NG from urine in these field settings. Similar performance has been reported from the laboratory. Despite longer time to results than traditional ICTs, the exceptional accuracy and operational benefits makes the GeneXpert device appealing for use where delays to treatment are frequent. This device will be further evaluated in a cluster-randomised controlled trial (TTANGO) to commence mid-2013.

022.7 HOME-BASED SAMPLE COLLECTION INCREASES CHLAMYDIA RETESTING AND DETECTS ADDITIONAL REPEAT POSITIVE TESTS: A RANDOMISED CONTROLLED TRIAL IN THREE RISK GROUPS

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Background Chlamydia retesting at three months after treatment is recommended to detect reinfections, but retesting rates are low. We assessed the impact of combining home-collection with SMS reminders on retesting rates in three risk groups.

Methods A randomised controlled trial was undertaken, involving 600 participants diagnosed with chlamydia: 200 men who have sex with men (MSM), 200 women and 200 heterosexual men. Participants were recruited from two Australian sexual health clinics and randomised to the home group (3-month SMS reminder and home-collection) or the clinic group (SMS reminder). The mailed