

20,771 (26.3%) had enough locating information to begin PNS. Among these partners initiated for PNS, 5,851 were unlocatable/refused PNS (28.2%, range: 23.9%–38.8%), 5,959 were prophylactically treated (28.6%, range: 2.1%–39.8%) and 5,905 were classified as infected and brought to treatment (28.4%; range: 12.1%–37.3%). After excluding partners treated before ( $n=1,436$ ) and  $\geq 90$  days after ( $n=90$ ) the index case interview, 4,379 partners were considered infected and brought to treatment (0.15 partners per reported case [range 0.02–0.50] or 0.18 partners per interviewed case [range 0.05–0.60]).

**Conclusion** For every 5 to 6 index patients interviewed, PNS resulted in 1 infected partner brought to treatment. The success of DIS in finding and bringing partners to treatment varied across jurisdictions.

**Disclosure** No significant relationships.

### P738 NO BEJEL AMONG *TREPONEMA PALLIDUM* ISOLATES DIAGNOSED AS SYPHILIS FROM SURINAM, ANTILLEAN AND DUTCH CLIENTS IN AMSTERDAM

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10.1136/sextrans-2019-sti.798

**Background** *Treponema pallidum* subsp. *pallidum* (TPA) is the causative agent of syphilis, a world-wide prevalent venereal disease. Bejel is caused by *T. pallidum* subsp. *endemicum* (TEN), which shows similar clinical manifestations and is morphologically and serologically indistinguishable from TPA. The PCR used for syphilis diagnostics, targeting the *poA* gene, does not discriminate between subspecies of *T. pallidum*. Bejel is thought to be restricted to semi-arid areas and its transmission to be non-venereal, but recently, in patients diagnosed with syphilis in Cuba and Japan, sexual transmission of TEN was shown to occur. We therefore performed molecular typing on samples from Surinam, Antillean and Dutch patients to discover bejel causing TEN strains among syphilis cases in Amsterdam.

**Methods** DNA was extracted from 137 ulcer swabs collected between 2006 and 2018 from male clients attending the Amsterdam sexually transmitted infections (STI) clinic. MLST was performed by partial sequence analysis of the *tp0136*, *tp0548* and *tp0705* genes to generate allelic profiles. In addition, 23S rRNA loci were checked for A2058G and A2059G macrolide resistance mutations.

**Results** We found 15 distinct allelic profiles from 99/137 (72%) fully typed samples, of which none were TEN, 83% were SS14-like strains and 17% Nichols-like. The most prevalent types were 1-3-1 (44%) and 1-1-1 (19%), in concordance with similar TPA typing studies. There was no association found between TPA types and ethnicity. Five new allelic types and profiles were found adding to the knowledge of TPA strain diversity. The successfully sequenced 23S rRNA loci from 123/137 (90%) samples showed the presence of A2058G and A2059G mutations, 79% and 2% respectively.

**Conclusion** No misdiagnoses were found within the samples from different ethnicities residing in Amsterdam, the

Netherlands. The strain diversity found in this study reflects the local male STI clinic population which is a diverse, mixed group.

**Disclosure** No significant relationships.

### P739 NOVEL RAPID TEST FOR IMPROVED DIAGNOSIS OF ACTIVE SYPHILIS AT THE POINT OF CARE

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10.1136/sextrans-2019-sti.799

**Background** Syphilis has been and still is one of the greatest global health concerns. Syphilis can seriously damage the nervous system of infected individuals including infants born to infected mother. Treatment of syphilis is simple and effective with penicillin but diagnosis is challenging, particularly in resource-constrained settings, due to the need for a laboratory-based confirmatory test. Current point of care (POC) tests for syphilis are available but cannot distinguish active infections from past treated infections with a misclassification rate of up to 50% (low specificity). We developed a prototype rapid POC test (IgA Confirm) that can differentiate active syphilis from past treated infections at the point of care.

**Methods** We conducted a prospective diagnostic accuracy study to assess the specificity (and sensitivity) of the IgA Confirm test in identifying active syphilis infections classified by *Treponema pallidum* Antibody (TPAb) and rapid plasma regain (RPR) laboratory serology. Between June-December 2018, 500 pregnant women attending Rahima Moosa Mother and Child hospital, South Africa were recruited and provided venous blood samples for syphilis testing including the IgA Confirm (index) and laboratory serology (reference) tests.

**Results** The IgA Confirm demonstrate a sensitivity of 100% (5/5) for identifying samples with active syphilis infections (TPAb positive and RPR positive); 100% (9/9) specificity for identifying samples with past or treated infections (TPAb positive, RPR negative) and, 99.4% (484/487) specificity for samples with no evidence of syphilis (TPAb and RPR negative).

**Conclusion** This study showed that the IgA Confirm test has the ability to identify active syphilis infection and meet the WHO Target Product Profile for syphilis confirmatory testing. Future study is needed to further evaluate diagnostic performance of the test in high prevalence setting.

**Disclosure** No significant relationships.

### P740 IMPROVING SYPHILIS DIAGNOSIS AND TREATMENT IN AN URBAN POPULATION THROUGH ROUTINE EMERGENCY DEPARTMENT SCREENING

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10.1136/sextrans-2019-sti.800

**Background** With the recent nationwide increase in syphilis, it is imperative to find novel means of reaching at-risk populations for early diagnosis and treatment. Many urban communities have both high rates of syphilis and frequently utilize the

emergency department (ED) as a primary source of medical care. In late 2018, the University of Chicago Medical Center (UCMC) began a quality improvement project directing providers to screen ED patients for syphilis regardless of presenting complaint. The objective of this study is to evaluate the potential utility of ED screening for syphilis.

**Methods** A retrospective chart review was performed of all patients with positive syphilis antibody testing from October through December of 2018, and all patients with positive rapid plasma reagin (RPR) or *Treponema pallidum* particle agglutination (TP-PA) testing were included as cases.

**Results** In the last three months of 2018, a total of 727 patients (average of 242 patients per month) were screened for syphilis in the ED. Of these, 61 (8.4%) tested positive for syphilis, 37 (60.1%) of whom had evidence of active infection, and 24 (39.3%) were late or unknown stage. 40.9% of patients testing positive for syphilis had presented with complaints other than abdominal pain, rash, or genitourinary symptoms. Two (3%) of patients testing positive for syphilis were also newly found to be pregnant and both were referred for antibiotic treatment in the first trimester.

**Conclusion** Early data suggests that screening of patients for syphilis in the ED regardless of presenting complaint yields high positive rates. ED screening may represent an effective way of combating the syphilis epidemic, particularly in the most vulnerable populations. In the near future, we plan to hold a provider awareness initiative combined with an update to the electronic medical record system with automated ordering reminders to increase the numbers of patients screened.

**Disclosure** No significant relationships.

#### P741 DETECTION OF *TREPONEMA PALLIDUM* DNA AT VARIOUS BODY LOCATIONS

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10.1136/sextrans-2019-sti.801

**Background** Syphilis is routinely diagnosed based on clinical findings and serological tests. Syphilis may be asymptomatic and in the early stages of infection serology may be false negative. This poses challenges in the diagnosis; missed infections may lead to onward transmission and late sequelae. The aim of this study is to assess the added value of testing various anatomical sites for DNA of *Treponema pallidum* (TP).

**Methods** The study is conducted at the STI clinic in Amsterdam. Eligible are men who have sex with men (MSM), 18 years or older with clinical signs or symptoms suggestive of syphilis stage 1 or stage 2, and those with serologically demonstrated early latent syphilis. Swabs taken from anus and pharynx, a urine sample, and a venous blood sample were tested using a validated in-house PCR targeting the *poA* gene (Tp-PCR). We intend to include 285 participants, with similar numbers of stage 1, stage 2, early latent syphilis, and patients without syphilis.

**Results** Between November 2018 and January 2019 we included 45 MSM. Eleven participants had syphilis stage 1, 10 stage 2, 11 early latent syphilis, and 13 did not have syphilis. Among the 11 stage 1 patients, 1 blood sample, 2 pharyngeal samples, 4 rectal samples and 3 urine samples were Tp-PCR positive. Among the 10 stage 2 patients, 2 blood samples, 8 pharyngeal samples, 6 rectal samples and 3 urine samples were Tp-PCR positive. Among the 11 early latent syphilis patients, 1 blood sample, 4 pharyngeal samples, 4 rectal samples and no urine samples were Tp-PCR positive. None of the samples of clients without syphilis were Tp-PCR positive.

**Conclusion** DNA of *T. pallidum* was frequently detected in various body compartments of 32 MSM diagnosed with syphilis. Tp-PCR on samples from various body locations might have a role in the diagnosis of early syphilis.

**Disclosure** No significant relationships.

#### P742 USING LOTTERY INCENTIVES TO ATTRACT SEXUALLY RISKY CHINESE MEN WHO HAVE SEX WITH MEN TO PREVENT SYPHILIS

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10.1136/sextrans-2019-sti.802

**Background** Individuals with risk-loving attitudes may be more likely to participate in high-risk sex and gambling. We investigated whether a lottery-based financial incentive linked to syphilis testing may attract Chinese men who have sex with men (MSM).

**Methods** In July/August 2018, an online cross-sectional survey was conducted in China. The survey collected information on socio-demographic characteristics, risk-taking attitude, sexual behaviors and their likelihood to test for syphilis linked with a lottery-based financial incentive where men were eligible if they tested negative for syphilis. We asked about the minimum lottery prize that would attract them to participate. Risk attitude was measured with a validated risk attitude scale, which asked men about their likelihood to take risks in general: scores ranged from 0 (avoids taking risk) to 10 (fully prepared to take risks). Risk behaviours include having multiple sexual partners and condomless sex. Logistic regression analysis was used to examine the association of willingness to participate in the syphilis testing lottery with risk attitude score and behaviors.

**Results** 699 MSM were enrolled with a median age of 26 years (IQR:23–30). 70% self-identified as gay and 52% reported ever testing for syphilis. 64% stated they were likely/very likely to test for syphilis linked with a lottery incentive. The median amount for the lottery had an expected value of 10 RMB (\$1.50 USD, IQR:5–30 RMB). Being willing to test for syphilis when a lottery was offered was associated with a higher risk attitude score (OR 1.12, 95%CI:1.06–1.18), older age (OR 1.03 per year increase, 95%CI: 1.00–1.06), reported more than one partner in the last 3 months (OR 1.71, 95%