be important access points for syphilis and drug use prevention.
Disclosure No significant relationships.

P768 THE EVOLUTION OF AN INFECTIOUS SYPHILIS EPIDEMIC IN A CANADIAN URBAN SETTING

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Background Reflecting worldwide trends, an outbreak of infectious syphilis was declared in Winnipeg, Canada in 2012. Initially exclusively an outbreak amongst men who have sex with men (MSM), increases among women were observed in 2014/15. This study compared the characteristics of more recent heterosexual cases of syphilis to those at the start of the heterosexual outbreak.
Methods Data were from infectious syphilis investigations (September 1st, 2011 to August 31st, 2018) from Winnipeg, Canada. Age-standardized rates (2006 Canadian population standard) and 95% confidence intervals (95%CI) are reported. Bivariate analyses (χ^2 tests) and multivariable logistic regression models compared heterosexual cases from 2011/12-2014/15 to 2015/16-2017/18 cases on socio-demographic characteristics and risk factors. Adjusted odds ratios (AOR) and 95%CI are reported.
Results A total of 770 infectious syphilis cases were reported to public health. Rates increased 25-fold, from 1.6/100,000 persons (95%CI:0.8–2.9) to 40.5/100,000 persons (95%CI: 36.1–45.3), between 2011/12 and 2017/18. The proportion of women increased from 8% to 47%; correspondingly, the ratio between male and female rates decreased from 4.5 to 1.3. Amongst men, the heterosexual proportion increased from 9% in 2011/12 to 75% in 2017/18. In bivariate analyses, more recent heterosexual cases were younger ($p<0.001$); more likely to report crystal methamphetamine (CM) use (30% vs 3%, $p<0.001$); gonorrhea (21% vs 3%, $p<0.001$) and chlamydia co-infection (23% vs 10%, $p=0.004$); history of incarceration (36% vs 14%, $p<0.001$); and having no fixed address (15% vs 2%, $p<0.001$). In multivariable models, CM use (AOR: 7.9; 95%CI:2.4–26.7), gonorrhea co-infection (AOR: 7.1; 95%CI: 2.1–24.1), and history of incarceration (AOR: 1.8; 95%CI: 1.1–3.5) remained statistically significant.
Conclusion At least two parallel epidemics of syphilis are occurring in Winnipeg. Although MSM cases have declined, control of the heterosexual outbreak remains elusive. Populations with multiple vulnerabilities, including CM use and history of incarceration bear the greatest burden. Public health surveillance should remain vigilant for congenital syphilis.
Disclosure No significant relationships.

P769 A SYSTEMATIC REVIEW ON ALTERNATIVE TREATMENTS FOR MATERNAL SYPHILIS

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Background Maternal syphilis leads to preventable adverse fetal health outcomes. The recommended treatment is benzathine penicillin, which is challenging due to shortages, drug allergies and inability to administer the injection. We conducted a literature review to identify potential treatment options for maternal syphilis.
Methods We searched PubMed, Embase, and Scopus from January 1, 1970 to December 31, 2018. The search terms "*syphilis*" AND ("*maternal*" OR "*pregnancy*" OR "*congenital*"), AND "*treatment*" NOT ("*screening*") were used. Additional articles were identified from the references. We included studies in English, with full text, on humans and women. Successful treatment was defined as maternal RPR titer decline and congenital syphilis prevention.
Results Of the 70 articles, 8 case series were included. 11 pregnant women were successfully treated with intramuscular ceftriaxone 250 mg: 7-day course for primary syphilis or 10-day course for secondary syphilis, repeated at 28-weeks gestation. One patient was successfully treated with amoxicillin 6g and probenecid 1g daily for 14 days, and another was successfully treated with a 6-day course of amoxicillin followed by ceftriaxone 2g intravenously for 8 days. In response to ampicillin 2g intravenously intrapartum, one mother and one neonate developed the Jarish-Herxheimer reaction in cases of undiagnosed syphilis. Macrolides failed to prevent congenital syphilis: 5 patients treated with azithromycin 1g orally for 1–10 days, one case report of erythromycin 750 mg orally QID for 12 days and one case report of two failed 15-day courses of oral erythromycin 750–800 mg QID until penicillin desensitization was initiated. One case of clindamycin decreased maternal RPR titers, but failed to prevent congenital syphilis.
Conclusion Overall, 23 patients were treated with penicillin alternatives (15 with beta-lactam antibiotics, 7 with macrolide antibiotics, 1 with clindamycin), and 13 were treated successfully. Clinical research should evaluate amoxicillin and cephalosporins. Our review does not support the use of macrolide antibiotics.
Disclosure No significant relationships.

P770 JARISCH-HERXHEIMER REACTION IN CENTRAL NERVOUS SYSTEM AMONG NEUROSYPHILIS PATIENTS: DISCONTINUATION OF THERAPY OR NOT?

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Background Syphilis has returned to china with a vengeance since the 21st century, and the epidemiology of neurosyphilis has largely paralleled that of active syphilis. Prompt therapy with high-dose intravenous benzylpenicillin is critical to alleviate clinical symptoms of neurosyphilis patients. However, patients may experience an exacerbation of mental and/or neurological symptoms following the initiation of treatment due to a severe Jarisch-Herxheimer reaction (JHR) in central nervous system (CNS). We retrospectively analyzed the incidence, risk factors and prognosis for JHR in CNS in Shanghai Skin Disease Hospital, China.
Methods From July 1, 2017 to December 31, 2018 at our sexually transmitted disease ward, 574 neurosyphilis patients received the high-dose intravenous benzylpenicillin. Patient factors were recorded, including age, gender, neurosyphilis type, serum and cerebrospinal fluid-venereal disease research laboratory test (CSF-VDRL) titer, white blood cell count and protein

level of CSF, accompanying symptoms, clinical management and prognosis.

Results All patients were HIV negative. The total incidence of JHR in CNS was 7.14% (41/574, 95% CI: 5.23–9.65%), being the most frequent among patients with general paresis. The mean timing of JHR after the initial dose of benzylpenicillin was to start at 6 hours (range: 0.5–13), peak at 8 hours (range: 0.5–20), and subside by 17 hours (range: 10–30). Besides fever and chills, the main symptoms were hallucination, paranoia, aggressive behavior, mental depression, cognitive impairment, confusion, urinary incontinence, stupor, convulsion and seizures in descending order. The JHR was significantly related to higher CSF-VDRL titer, pleocytosis, no usage of antibiotics in the last 6 months ($p<0.05$). The therapy was stopped with a resolution of seizures in two patients. However, benzylpenicillin was reinstituted uneventfully 3 days later.

Conclusion Higher CSF-VDRL titer, pleocytosis and no recent usage of antibiotics were associated with an increased risk for JHR in CNS. Therapy of neurosyphilis can be continued with intensive surveillance.

Disclosure No significant relationships.

P771 CLINICAL TRIAL OF CEFIXIME FOR THE TREATMENT OF EARLY SYPHILIS – PRELIMINARY RESULTS

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Background Increasing incidence of syphilis in the United States and penicillin shortages internationally call for research on alternative treatment options. In this randomized, multisite, open-label, non-comparative clinical trial, we are evaluating the efficacy of cefixime as treatment of early syphilis.

Methods Eligible participants are 18 years or older, have laboratory confirmed early syphilis (new Rapid Plasma Reagin [RPR] titer ≥1:8 or 4-fold titer rise in past 12 months), and no concomitant antibiotic use. Patients with HIV infection must have undetectable viral load in the past 12 months and CD4+ count ≥350 cells/µl. Participants were randomized to receive either 2.4M IU benzathine penicillin G intramuscularly once or cefixime 400 mg orally twice a day, for ten days. Participants return for follow-up at 3, 6, and 12 months post-treatment for laboratory testing. The main outcome is a 4-fold RPR titer decrease at 6 months post-treatment.

Results To date, 27 participants (15 penicillin, 12 cefixime) are enrolled. The majority of the study population is men (26/27), Latino (15/27), and HIV-infected (25/27). Eight participants completed their 3-month follow up (4 cefixime/4 penicillin). In the cefixime arm, 3/4 participants had an equal or greater than four-fold decrease in the RPR titer, and 1/4 had a two-fold decrease. In the penicillin arm, 2/4 participants had an equal or greater than 4-fold decrease in the RPR titer, 1/4 had a two-fold decrease, and 1/4 is missing data.

Conclusion Enrollment is still open and data collection ongoing. Initial results are encouraging.

Disclosure No significant relationships.

P772 GASTRIC SYPHILIS: A CASE OF GASTRIC SYPHILIS DEVELOPED INTO NEUROSYPHILIS

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Background Syphilis caused by the spirochetes *Treponema pallidum,* which transmitted mainly through sexual contact and blood transmission. The spirochetes spread from the damaged skin to bloodstream, at which point any organ may be affected included bone, central nervous system, and visceral organs-the stomach. Therefore, when treating patients with syphilis, the clinician must rule out the involvement of other organs. Gastric syphilis is a rare presentation of infection with *Treponema pallidum,* which has no-specific symptoms. Gastric syphilis may occur in any phase of syphilis, predominantly in the secondary (50%), but rarely in the third(6%). There are no standard recommendations specifically address the treatment of gastric syphilis. The general approach is to treat according to the stage of the disease. However, if the clinician does not have experience the disease will be misdiagnosed. Here, we will describe a case of a patient with gastric involvement, whose symptom repeated after conventional treatment.

Methods The patent's history, clinical examination, biology, cerebrospinal fluid,blood nest PCR findings and reatment are reported. We also discuss the profit treatment options.

Results we described a case of a patient with the complaint of epigastralgia, pyrosis, and regurgitation. The gastroscopy revealed multiple ulcerative lesions at the antrum, gastric angle and duodenal ampulla, in which suspected cancer. Mucosal biopsy revealed an inflammatory infiltrate with multiple mature plasma cells. Immunohistochemistry and a nested PCR showed the presence of *Treponema pallidum* in the gastric tissues. But, with conventional treatment, the symptom repeated.

Conclusion The patient was diagnosed as having neurosyphilis with gastric syphilis.Her epigastric pain improved on the seventh day of the treatment. Follow-up gastroscopic findings tree months after diagnosis showed improved ulcerative lesions on gastric antrum and duodenal ampulla. The CSF examination was negative.

Disclosure No significant relationships.

P773 INCREASED DETECTION RATES OF PRIMARY SYPHILIS BY PCR IN A PROVINCIAL LABORATORY

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Background North America is experiencing an exponential rise in the numbers of infectious syphilis cases. The United States of America had 9.5/100,000 cases in 2017 which is a 10.5% increase from 2016 and a 72.7% increase from 2013. This trend is no different in Canada with Alberta being particularly