**Introduction**

Antimicrobial resistant *Neisseria gonorrhoeae* (NG) is important to monitor as a potential global public health threat. The Thailand Enhanced Gonococcal Antimicrobial Surveillance Programme (EGASP) was started in November 2015 as a collaboration between the Thailand Ministry of Public Health, the US Centres for Disease Control and Prevention and the World Health Organisation. As a part of this surveillance activity, Thailand conducted an internal quality assessment (QA) of clinical and laboratory data in order to improve surveillance data quality.

**Methods**

EGASP Thailand occurs in 2 sentinel sites: Bangrak Hospital and Silom Community Clinic at Tropical Medicine. Men with symptoms had demographic and clinical data collected as well as a urethral specimen collected for NG culture. A random selection of 10% of EGASP IDs were sampled from November 2015 to June 2016. We assessed clinical and laboratory findings using a standardised review tool that compared the EGASP database to source documents. We describe key findings from the review activities.

**Results**

Overall, 699 specimens were collected for EGASP and 70 (10%) EGASP IDs were randomly sampled by SQL command for review. Results from the quality review included: differences in laboratory findings (6%), differences in interpretation of the clinical abstraction tool between sentinel sites (10%), missing data in the EGASP database after chart abstraction and laboratory testing (14%), differences in the recording of clinical data (19%), and differences in the recording and tracking of laboratory variables (47%). As a result of this evaluation, staff updated missing data on records sampled, conducted an overall refresher training for staff and established a new laboratory tracking process.

**Conclusion**

EGASP Thailand is the first coordinated global project to conduct comprehensive surveillance for NG resistance from symptomatic men. An internal QA helped direct efforts to improve surveillance. Ongoing NG surveillance and periodic quality assessments help ensure high quality surveillance data.

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**Abstracts**

**Oral Presentation Session 13**

**Biomedical and Systems Biology**

**O13.1**

**SURVEY OF ANTIMICROBIAL RESISTANCE IN CLINICAL NEISSERIA GONORRHOEAE ISOLATED OVER FOUR YEARS IN NAIROBI – KENYA**

1Meshack Juma Omolo, 1Lewa Pole, 1Isabella Mwangi, 2Joshua Kimani, 3Omu Anzala, 3Jonathan Ololo, 4Wi Teodora Elvira, 5Susanne Jacobsson, 5Magnus Unemo. 1Kavi-Institute of Clinical Research (UON), Kenya; 2Sex Workers Outreach Program Clinic (SWOP), Kenya; 3Department of Infectious Diseases, Amsterdam Health Service, The Netherlands; 4STD Outpatient Clinic, Amsterdam Health Service, The Netherlands; 5WHO Collaboration Centre for Gonorrhoea and Other STIs, Örebro University Hospital in Sweden

10.1136/sextrans-2017-053264.72

**Introduction**

Systematic antimicrobial resistance (AMR) surveillance of *N. gonorrhoea* (GC) from local to global level are being intensified to inform and design a monitoring system for its control. High-level resistance to previously recommended quinolones is widespread and decreased susceptibility to the extended-spectrum (third-generation) cephalosporin has been report. The Gonococcus antimicrobial surveillance program (GASP) in Kenya and the region carried out a study to determine the frequency and diversity of antimicrobial resistance of GC isolates from a Sex Workers Outreach Program (SWOP) Clinic in Nairobi over a period of 4 years.

**Methods**

The study tested 238 GC isolates from participants presenting with cervical/vaginal discharge. Samples were inoculated directly on modified Thayer Martin media (MTM), transported to GASP Laboratories at KAVI-Institute of Clinical Research for processing by standard bacteriological procedures. Antibiotic susceptibility testing was performed using diffusion gradient method. The strains were defined as susceptible, intermediate and resistant using E-test as guided by WHO, all the findings were validated at WHO Collaborating Centre for Gonorrhoea and other STIs, Orebbo University Hospital in Sweden.

**Results**

GC isolates, 41 in 2012, 119 in 2013, 24 in 2014 and 54 in 2015 showed 100% susceptibility to cefixime, ceftriaxone and spectinomycin in four years with a mean susceptibility of 82%, 37.7%, 19.5%, 1.6% and 0% for azithromycin, erythromycin, ciprofloxacin, penicillin and tetracycline respectively. Over the period ciprofloxacin showed a rise in resistance from 56% in 2012, 58.8% in 2013, 66.7% in 2014 to 68.5% in 2015.

**Conclusion**

Spectinomycin, cefixime, ceftriaxone, azithromycin are useful drugs, while Ciprofloxacin the most prescribed antibiotic is no longer reliable for treatment of GC in the region. Continued surveillance will enable the public health managers to modify the national treatment guidelines. Worsening GC drug resistance will compromise effective treatment and decrease disease control efforts.

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**O13.2**

**MOLECULAR EPIDEMIOLOGY IN RELATION TO AZITHROMYCIN RESISTANCE IN NEISSERIA GONORRHOEAE ISOLATES FROM AMSTERDAM, THE NETHERLANDS, BETWEEN 2008 AND 2015 – A CASE-CONTROL STUDY**

1Alie P Van Dam, 2Caroline Wind, 3Maarten Schim Van Der Loef, 4Henry De Vries, 2Mirjam Dierdorp, 4Sylvia Bruijsten. 1Amsterdam Sexually Transmitted Infections Clinic, from January 2008 through September 2015.

**Methods**

A hierarchical cluster analysis of NG-MLVA £ 21 was constructed for and the World Health Organisation. As a part of this surveillance activity, Thailand conducted an internal quality assessment (QA) of clinical and laboratory data in order to improve surveillance data quality.

**Results**

Overall, 699 specimens were collected for EGASP and 70 (10%) EGASP IDs were randomly sampled by SQL command for review. Results from the quality review included: differences in laboratory findings (6%), differences in interpretation of the clinical abstraction tool between sentinel sites (10%), missing data in the EGASP database after chart abstraction and laboratory testing (14%), differences in the recording of clinical data (19%), and differences in the recording and tracking of laboratory variables (47%). As a result of this evaluation, staff updated missing data on records sampled, conducted an overall refresher training for staff and established a new laboratory tracking process.

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1Meshack Juma Omolo, 1Lewa Pole, 1Isabella Mwangi, 2Joshua Kimani, 3Omu Anzala, 3Jonathan Ololo, 4Wi Teodora Elvira, 5Susanne Jacobsson, 5Magnus Unemo. 1Kavi-Institute of Clinical Research (UON), Kenya; 2Sex Workers Outreach Program Clinic (SWOP), Kenya; 3Department of Infectious Diseases, Amsterdam Health Service, The Netherlands; 4STD Outpatient Clinic, Amsterdam Health Service, The Netherlands; 5WHO Collaboration Centre for Gonorrhoea and Other STIs, Örebro University Hospital in Sweden

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Spectinomycin, cefixime, ceftriaxone, azithromycin are useful drugs, while Ciprofloxacin the most prescribed antibiotic is no longer reliable for treatment of GC in the region. Continued surveillance will enable the public health managers to modify the national treatment guidelines. Worsening GC drug resistance will compromise effective treatment and decrease disease control efforts.

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**O13.2**

**MOLECULAR EPIDEMIOLOGY IN RELATION TO AZITHROMYCIN RESISTANCE IN NEISSERIA GONORRHOEAE ISOLATES FROM AMSTERDAM, THE NETHERLANDS, BETWEEN 2008 AND 2015 – A CASE-CONTROL STUDY**

1Alie P Van Dam, 2Caroline Wind, 3Maarten Schim Van Der Loef, 4Henry De Vries, 2Mirjam Dierdorp, 4Sylvia Bruijsten. 1Amsterdam Sexually Transmitted Infections Clinic, from January 2008 through September 2015.

**Methods**

A hierarchical cluster analysis of NG-MLVA £ 21 was constructed for
Abstracts

013.3 VACCINE DEVELOPMENT TO COMBAT ANTIMICROBIAL RESISTANT GONORRHOEA
Kate L Seib, Evgeny A Semchenko. Institute for Glycomics, Griffith University
10.1136/sextrans-2017-053264.74

Introduction Neisseria gonorrhoeae, the causative agent of gonorrhoea, is a major public health problem worldwide with an estimated global incidence of 106 million cases/yr. If left undiagnosed or untreated, infection can lead to severe sequelae that include pelvic inflammatory disease, infertility, neonatal complications, and an increased risk of HIV. It is recognised by WHO and CDC as an urgent threat to global health due to the emergence of multi-drug resistant gonococcal strains. There is currently no vaccine, and no new antibiotics or new vaccine candidates in late-stage development.

Methods To facilitate gonococcal vaccine development, we performed mathematical modelling to predict the impact of different vaccine scenarios. We have also identified and characterised a series of potential vaccine candidates.

Results Mathematical modelling of different vaccine scenarios indicates that even a modestly efficacious vaccine could have a substantial impact on gonorrhoea prevalence and sequelae. We have also characterised 2 highly conserved and immunogenic proteins that include pelvic inflammatory disease, infertility, neonatal complications, and an increased risk of HIV. It is recognised by WHO and CDC as an urgent threat to global health due to the emergence of multi-drug resistant gonococcal strains. There is currently no vaccine, and no new antibiotics or new vaccine candidates in late-stage development.

Conclusion We present two antigens that elicit both bactericidal and functional blocking antibodies, which are valid candidate antigens for possible inclusion in an urgently needed vaccine for the prevention of gonorrhoea.

013.4 MULTIPLE CYTOKINE GENE EXPRESSION DETECTED AFTER HPV VACCINATION
Ana Paula Ferreira Costa,1 Paulo César Giraldo,1 Paula Renata Lima Machado,1 Kleber Juscelin Silva Farias,1 Janaina Oliveira Cristigm,1 José Eleutério Júnior,1 Steven S Wilkin,1 Ana Katherine Gonçalves.1 Federal University of Rio Grande do Norte, Brazil,2 University of Campinas, Brazil,3 Federal University of Goiás, Brazil,4 Cornell University, USA
10.1136/sextrans-2017-053264.75

Introduction Human papillomavirus (HPV) infection does minimal damage and does not induce the production of immune mediators by host epithelial cells. The induction of a pro-inflammatory immune response is necessary to break the tolerance induced by HPV. Therapeutic interventions with vaccines to induce an effective immune response have the potential to treat latent infection as well as clinically apparent lesions. The aim of this study was to evaluate the influence of the human papillomavirus (HPV) vaccination on peripheral blood mononuclear cell (PBMC) proliferation and cytokine gene transcription.

Methods PBMCs isolated after immunisation were incubated with HPV vaccine, phytohaemagglutinin (PHA) or buffer. Cell proliferation was assessed by MTT reduction assay. RNA was extracted from PBMCs, and the relative concentration of cytokine messenger RNA (mRNA) transcripts (IFN-b, IFN-c, IL-12, TNF-a, IL-6, IL-17, or IL-10) relative to transcription of the b-actin gene was determined by real-time polymerase chain reaction.

Results PBMC proliferation in response to HPV vaccine and PHA were greater than that observed in unstimulated PBMC cultures. The median increase in vaccine-stimulated cultures was: IFN-b=334.4 fold; IL-12=46.3 fold; TNF-a=12.6 fold; IL-6=9.07 fold; IL-17=7.3 fold; and IL-10=6.4 fold. Proliferative PBMC responses and multiple cytokine gene expression were detected in women who received the HPV vaccine.

013.5 CORE GROUPS OF INDIVIDUALS WITH CHLAMYDIA AND/OR GONORRHOEA REINFECtIONS HAVE INCREASED ODDS OF DIAGNOSIS WITH INFECTIOUS SYPHILIS: A POPULATION-BASED RETROSPECTIVE COHORT STUDY IN BRITISH COLUMBIA, CANADA, 2006–2015
Heming Jiang, Christine Lukac, Gina Ogilvie, Mark Gilbert, Troy Grennan, Jason Wong. British Columbia Centre for Disease Control, Canada
10.1136/sextrans-2017-053264.76

Introduction The incidence of infectious syphilis (primary, secondary, or early latent) has increased in British Columbia (BC). Identifying core groups at risk for syphilis can inform public health programming. We assessed the odds of syphilis infection among individuals with repeat Chlamydia trachomatis (CT) and/or Neisseria gonorrhoeae (GC) infections in this population-based analysis.

Methods Surveillance records for all BC residents diagnosed with ≥2 CT (CT reinfection) or ≥2 GC (GC reinfection) or ≥2 infections including CT and GC (CT/GC reinfection) from 1/1/2006 to 12/31/2015 were linked with all infectious syphilis cases from the same time period. Logistic regression models...