by PCR, sequenced and analysed for drug resistance mutations and subtype information.

Results HIV-2 RNA was detected in 7 of 10 ART-naïve and 2 of 6 ART-experienced patients. Detectable HIV-2 viral loads in these patients ranged from below the lower limit of quantification (<2.35 log IU/ml) to 5.45 log IU/ml. One ART-experienced patient had M184V, K65R and Y115F mutations in RT sequences from both plasma and PBMC. There were no drug resistance mutations identified from ART- naïve samples.

Conclusion This is the first study in Ghana to show evidence of mutations in HIV-2 strains from patients receiving HIV-1 targeted antiretrovirals. The results prompt monitoring of drug resistance to improve clinical management of HIV-2 infected patients.

LB 2.59 IMPROVING STD SCREENING IN HIV CARE THROUGH IMPLEMENTATION OF SELF-COLLECTED EXTRAGENITAL SWABS

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Introduction Screening for syphilis, gonorrhoea (GC) and chlamydia (CT) is recommended at least annually for HIV-positive men who have sex with men (MSM) in the United States (US). Recent analyses from the US Medical Monitoring Project demonstrate that STD screening of HIV-positive MSM remains far below that recommended by guidelines; specific data on extragenital GC/CT screening is not reported. We implemented a quality improvement intervention to improve STD screening (syphilis, GC/CT) in a large managed care organisation (16 centres) including didactic training and implementation of self-collected swabs for GC/CT.

Methods We analysed data from the Kaiser Permanente Northern California HIV Registry to calculate the proportion of MSM tested for syphilis and GC/CT (any site, rectal/pharyngeal site) at least once in the prior year. Laboratory validation of self-collected swabs was completed by 1/2014, rolled out at five centres by 12/2014, and 11 centres by 11/2016. **Screening data were finalised for analysis in 1/2017.** Three time periods were examined: baseline (6/2012), 1 year (11/2015), and 2 years (11/2016) post initial implementation of self-collection. Cochran-Armitage was used to test for trends.

Results During the study period, the denominator of eligible HIV-positive MSM increased from n=4499 to 5866. Annual screening for GC/CT (any site) significantly increased from 45.2% to 58.3% (p_{trend} <0.0001); extragenital GC/CT (among those screened) increased from 48.4% to 58.1% (p_{trend} <0.0001). Medical centres that implemented self-collected swabs within the first year reported higher extragenital screening rates than those who did not (60.6% vs 20.2%, p<0.0001), this difference persisted into year 2. Syphilis screening also increased from 73.6% to 76.8% (p_{trend}=0.0002).

Conclusion Implementation of self-collected GC/CT swabs is an effective intervention to increase STD screening among MSM in a large US managed care organisation. This intervention should be disseminated to other settings to improve currently suboptimal STD screening rates among MSM.

LB2.60 FIELD EVALUATION OF A NOVEL DUAL HIV/SYPHILIS RAPID TEST – MALAWI, 2014–2015

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Introduction Dual HIV/syphilis rapid diagnostic tests (RDTs) may prevent congenital syphilis by facilitating syphilis diagnosis in pregnant women receiving HIV testing. The dual HIV-1/2 treponemal syphilis RDT (*Chembio DPP HIV-Syphilis Assay*) performs well in the lab, but its field performance is unknown. We investigated test performance under field conditions for this dual RDT and Malawi's single RDTs for HIV and syphilis to assess whether the dual RDT might be a suitable substitute for the first-line single RDT in Malawi's HIV algorithm.

Methods During Jul 2014−Nov 2015, 1798 pregnant women attending a first antenatal visit were recruited if their HIV status was negative or unknown. Women received the single HIV (Determine HIV-1/2) and syphilis (Determine Syphilis TP) RDTs and the dual RDT. By Dec 2016, CDC had performed Rapid Plasma Reagin (RPR), *Treponema pallidum* particle agglutination (TPPA), and 3rd-generation HIV EIA testing with Western Blot confirmation. In Jan 2017, the validity of all RDTs relative to the CDC HIV algorithm, TPPA, and TPPA/RPR results were calculated.

Results Of 1791 women (99.6%) with complete results, 258 (14.4%) were HIV-positive by CDC's algorithm; 81 (4.5%) were TPPA+; and 46 (2.6%) were TPPA+/RPR+. The dual RDT was 95.0% sensitive and 96.0% specific for HIV; the single HIV RDT was 93.0% sensitive and 99.3% specific. HIV test specificities were significantly different (p<0.01). Both dual and single HIV RDTs were 96.9% sensitive during repeat lab testing. Using TPPA+ as the standard, the dual RDT was 69.1% sensitive and 99.8% specific for syphilis; the single syphilis RDT was 63.0% sensitive and 99.8% specific. Among women most likely to vertically transmit syphilis (TPPA+/RPR +, titer ≥1:4), the dual and single RDTs were 100.0% and 88.2% sensitive, respectively.

Conclusion The dual RDT syphilis component performed comparably to the single syphilis RDT and performed very well among women likely to vertically transmit syphilis. The dual RDT HIV component had comparable sensitivity but lower specificity than the single HIV RDT.

LB2.61 NEAR FULL LENGTH DEEP SEQUENCING OF NEWLY ACQUIRED HIV INFECTIONS IN SAN FRANCISCO

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Introduction We propose to perform near full-length deep sequencing of HIV-1 genomes from approximately 100 newly-diagnosed cases in San Francisco in the previous year (2016), using stored specimens from the clinical genotyping service that serves the majority of HIV cases in San Francisco.
Methods Stored, frozen blood plasma from approximately100 newly-diagnosed cases in San Francisco over the previous year will be analysed. Four amplification products covering most of the HIV-1 genome will be derived by RT-PCR adapted from existing protocols. These protocols have been shown to be successful for the near full length analysis of approximately 85% of specimens having viral load greater than 10 000 copies per ml, which represent the majority of newly diagnosed people in San Francisco. Briefly, four overlapping regions spanning all reading frames of the HIV genome will be amplified in a published one-step RT-PCR strategy. Pooled amplicons will be purified and sequenced on an Illumina HiSeq instrument operated by GENEWIZ.
Results This work is ongoing and we have generated approximately half of the near full length HIV genomes for this project. This data and techniques will be presented as part of the results.
Conclusion Deep sequencing provides better resolution for characterising the duration of infection. Viral diversity increases over time on average and can be estimated from the frequency of sequence ambiguities in population sequences. However, sequence ambiguities can occur due to dual infection, which can occur early in infection, and make the virus population sequence appear older.
Support This project is funded entirely by an RO1 grant from the National Institutes of Health, USA

Epidemiology, Monitoring and Evaluation

P3.01 TRENDS IN HIV AND HTLV INFECTIONS ACCORDING TO AGE AND RISK FACTORS IN BRAZIL

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Introduction From 1980 to June 2016 the Ministry of Health of Brazil notified 842,710 HIV/AIDS cases; 1 36 945 new cases were notified after 2007 (71,396 in the Southeast region). An increase in the number of individuals aged 15 to 34 years was observed, with a male to female ratio of 2.4:1 and sexual exposure as the major risk factor. At present, 50% of males referred homosexual practice and 9% bisexual; conversely, 96% of females are heterosexual. HTLV-1 and HTLV-2 are endemic in Brazil; estimated in 2.5 million people. Since HIV and HTLV share routes of virus transmission, coinfection of such virus could occur.
Methods The present study discloses the age and gender of 1,715 HIV-infected individuals of AIDS care services (São Paulo, Brazil) in period from 2010 to 2016, whose blood samples were sent to Instituto Adolfo Lutz for HTLV infection analysis, and they were divided according to sex in five age-groups (G1=16–25 years, G2=26–30 years, G3=31–40 years, G4=41–50 years, and G5=>50 years). HIV/HTLV positive cases were analysed in each group.
Results The increase of the HIV-infected male of G1 was detected (<10% in 2010 vs. 33% in 2016) as well in patients of G2 (<10% in 2010 vs. 22% in 2016). Among females, although in minor percentages, an increase in HIV infection in patients of 16 to 25 years was detected. Concerning HIV/HTLV coinfection, during the years from 2010 to 2014 all cases were detected in patients over 30 years old, but from 2015 to 2016 three cases of HTLV infection were detected in patients with less than 30 years of age.
Conclusion The increase in the last years in Brazil in the number of HIV infections in the second and third decades of life is of concern, and could be related to unprotected sexual contact and promiscuity after consuming drugs (alcohol, marijuana and others). Although HTLV was more efficiently transmitted by parenteral route, sexual transmission seems to account for the new HTLV infected individuals in Brazil. Surveillance of such viruses is important to properly control these viruses spread.
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P3.02 MOTHER-TO-CHILD TRANSMISSION OF HIV ELIMINATION CERTIFICATION PROCESS IN BRAZIL

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Introduction MTCT is the main HIV infection route in Brazilian children. The rates of AIDS detection in children under five years have been decreasing in Brazil since 2004, from 5.6/100,000 inhabitants in 2003 to 2.5/100,000 inhabitants in 2015, with southeast area decreasing fastly and brought the national rate down. To contribute to the reduction in MTC transmission of HIV in Brazil, the Ministry of Health (MoH) launched at the end of 2016 the certification process of cities that eliminated MTCT. The objective of this work is to present the Brazilian process of implementation of HIV MTCT elimination certification.
Methods Experts working group was establish to adapt PAHO criteria to the Brazilian scenario. We included as impact indicators the HIV detection rates among children by birth year; and the proportion of children until 18 months old that were exposed to HIV and was infected, and, in addition must have more than 1 00 000 inhabitants. We analysed data from our national surveillance systems, between 2012 and 2014, to select the municipalities to initiate the process of certification.
Results To be eligible municipalities has to present HIV detection rates≤0.3/1000 live births and/or proportion of children exposed to HIV classified as infected <2%. 3816 out of 5,570 Brazilian municipalities were eligible for certification. Among them 1949 presented the minimum epidemiological criteria to start the certification process, but just 82 metropolises with more than 1 00 000 inhabitants were eligible to start the process.
Conclusion The selected cities must create a multidisciplinary working group to investigate the impact and process indicators established, and need to meet some process indicators that includes prenatal coverage; HIV tests performed during prenatal among pregnant women; and antiretroviral therapy among infected pregnant. Based on these evidences the cities will receive a certificate of elimination of MTCT HIV. The