

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% ( $p_{\text{trend}} < 0.0001$ ); extragenital GC/CT (among those screened) increased from 48.4% to 58.1% ( $p_{\text{trend}} < 0.0001$ ). 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% ( $p_{\text{trend}} = 0.0002$ ).

**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 3<sup>rd</sup>-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  $\geq 1:4$ ), 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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