

matched with the Puerto Rico Central Cancer Registry (PRCCR) database. AIDS and non-AIDS related malignancies standardised incidence rate (SIR) and 95% CI in three time periods, defined as: 1992–1995 (pre-HAART), 1996–2002 (early-HAART), and 2003–2009 (late-HAART) were established. SIR evaluates a measure of risk related to the general population, and is defined as the ratio of observed to expected number of cancers. Expected counts were estimated by applying gender, age, and calendar years PRCCR's specific cancer incidence rates to our cohort.

Results Of the 296 malignancies found; 29.3% were women, 39.3% were injecting drug users and 42.9% were AIDS related cancers. The SIR for all malignancies in the pre-HAART period (10.15) decreased to 5.35 in the early-HAART, and to 2.04 in the late-HAART period. AIDS related malignancies SIRs decreased after HAART from 91.99 to 16.48; however, Kaposi's sarcoma (KS) and invasive cervical carcinoma (ICC) SIRs remained significantly higher in the late-HAART period (50.52 and 9.17). Non-AIDS related malignancies' SIRs of the oral cavity/pharynx, liver, anus, vaginal, testis, Hodgkin's lymphomas (HL) and non-HL (NHL) were significantly higher (SIRs > 3.30) in the late-HAART period.

Conclusion Availability of HAART in this Hispanic HIV/AIDS cohort has significantly decreased the malignancies risk. However, the higher incidence of KS, ICC and non-AIDS related malignancies in the late-HAART is suggestive of the role of additional oncogenic factors including sexual transmitted and injecting drug use infections. Aggressive intervention in the form of vaccines, risky practise reduction, early screening intervention and education needs to be incremented in this vulnerable population. Granted by 8G12MD007583, 8U54MD007587 and NPCR-CDC

P3.320 UNLINKED ANONYMOUS TESTING FOR MONITORING HIV PREVALENCE IN SENTINEL GROUPS IN SLOVENIA, 2002–2011

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Background In addition to universal mandatory HIV/AIDS case reporting for HIV surveillance purposes, we also monitor HIV prevalence in several sentinel populations at higher risk (injecting drug users (IDU), men who have sex with men (MSM), patients with sexually transmitted infections (STI)) and one low risk group (pregnant women).

Methods During 2002–2011, we continuously sampled residual sera from STI patients tested for syphilis and every second year, residual sera from pregnant women screened for syphilis in several laboratories. Saliva specimens were continuously voluntarily obtained from IDU entering a substitution treatment programme and also, but for three months per year only, from IDU attending a harm reduction programme. Once per year, we obtained saliva specimens from MSM attending an MSM event. Specimens were labelled only with the type of sentinel population, sampling year, sex, and age group and were tested for anti-HIV antibodies.

Results 1,066 saliva specimens were collected from MSM, 2,048 saliva specimens from IDU, 6,327 serum specimens from patients with STI, and 39,818 serum specimens from pregnant women. Annual prevalence estimates for MSM varied between 0% in 2002 and 7.6% in 2011, for patients with STI between 0.2% in 2003 and 2.7% in 2008, and for pregnancies from 0% in 2003 and 2007 to 0.03% in 2011. Among IDU specimens, only two tested anti-HIV positive, one in 2010 and one in 2011 (0.4% and 0.5% respectively).

Conclusions Our results indicate a disproportionally high and rising HIV infection prevalence among MSM that has increased above 5% in 2011. HIV infection prevalence among pregnancies has remained rather low, however, the highest ever (0.5%) has been estimated in 2011. Promotion of safer sexual behaviour and HIV testing among MSM as well as positive prevention among MSM with HIV diagnosis are urgently needed. The introduction of HIV screening of pregnancies should be considered.

P3.321 ACCEPTABILITY OF DATA COLLECTION ON MOBILE PHONES USING ODK SOFTWARE FOR SELF-ADMINISTERED SEXUAL BEHAVIOUR QUESTIONNAIRES

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Background Previous studies in Africa and Latin America have shown that conducting surveys with mobile devices saves time and money compared to traditional pen-and-paper surveys. Open Data Kit (ODK) is an open-source application suite for building, collecting, and managing data using Android-enabled phones or tablets. ODK enables complex skip patterns, multi-language implementation, multimedia, collection of GPS coordinates, and secure web-based data storage.

Methods Two self-administered sexual behaviour surveys were conducted on mobile phones using ODK: one with adolescents in Cape Town and Port Elizabeth, South Africa (n = 4485, median age 15 years, 146-item questionnaire); one with adult male soccer players in Bulawayo, Zimbabwe (n = 663, median age 24 years, 71-item questionnaire). Ten focus group discussions (FGDs) were conducted with participants and survey teams to assess acceptability. Additionally, participants were asked survey questions related to their comfort, understanding and satisfaction with this method of questionnaire administration. Non-response rates are reported for selected sensitive questions asked on both questionnaires.

Results FGDs found that participants and facilitators were comfortable and engaged when using the mobile phones. There was a strong feeling that using the mobile phone provided increased privacy and confidentiality when answering sensitive questions, compared to self-administered paper-based sexual behaviour surveys. In all, 4015 (78.1%) participants reported preferring the mobile-phone-based survey to a pen-and-paper survey, while 716 (13.9%) reported preferring pen-and-paper. Low non-response was observed in both studies for reported HIV testing (SA: 2.7%; Zim: 1.8%), condom use ever (SA: 8.7%; Zim: 2.0%), and previous STI experience (SA: 8.1%; Zim: 2.6%).

Conclusions Data capture on mobile phones using ODK had high acceptability among both South African adolescents and Zimbabwean men. Researchers conducting sexual behaviour surveys should consider data collection on mobile phones using ODK software as a potential data capture method.

P3.322 LACK OF STANDARDISED REPORTING AND DOCUMENTATION OF MEASURES BEYOND ACCURACY IMPAIR QUALITY OF RESEARCH: EVIDENCE FROM SYPHILIS AND HIV POINT-OF-CARE DIAGNOSTICS

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Background HIV and Syphilis collectively infect about 70 million individuals. Both infections have long asymptomatic periods,

making timely screening imperative for infection control. While enough evidence exists on diagnostic accuracy measures for point-of-care tests (POCTs), the quality of evidence on measures beyond accuracy is poor. We reviewed evidence on these implementation research outcomes (IROs) and summarised their quality.

Method Two reviewers systematically searched 10+ electronic databases for the period: January 1980–September 2012, independently abstracted data and synthesised outcomes narratively. Over 10,000 citations were screened and a final set of 191 studies identified for inclusion.

Results Of 191 studies, almost half 46% ($n = 127$) in HIV and 41% ($n = 64$) in syphilis, reported IROs. IROs included acceptability, preference, feasibility and impact. Across 16 studies, acceptability measure was reported as proportions, rates, without confidence intervals often without clear definitions. Across 9 studies, preference was reported as proportion, without definitions or comparators. Feasibility metric across 7 studies, was ill-defined and heterogeneously reported as either completion of strategy, or test procedure, often as a statistic without confidence intervals or a definition or a quantifiable metric. Impact measure ($n = 13$) was best quantified in clinical trials-reported as either time to treatment initiation, or time to receiving a test result, or change in numbers newly infected or screened with a POCT strategy. Unclear definitions of other IROs, lax measurement resulted in deficient documentation and weak quality ratings on STROBE and CONSORT checklists, raising concerns about the quality of the evidence presented.

Conclusion Poor reporting of IROs (i.e. feasibility, acceptability, preference) in POCT diagnostics masked evidence and pointed to the need for standardised definitions, quantification and reporting for them. A framework for documenting metrics beyond accuracy and impact is urgently needed to improve evaluation of true benefits of POCT diagnostics in implementation research.

P3.323 PREVALENCE OF CHLAMYDIA TRACHOMATIS IN THE UNITED STATES AFTER ADJUSTING FOR SENSITIVITY AND SPECIFICITY OF THE SCREENING TEST

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According to the Centers for Disease Control and Prevention (CDC), *Chlamydia trachomatis* infection is among the most prevalent of all sexually transmitted diseases (STDs), and since 1994, has comprised the largest proportion of all STDs reported to CDC. In the past, researchers have used nationally representative surveys, such as, the National Health and Nutrition Examination Survey to estimate chlamydia prevalence and trend under the assumption that the test used to screen for chlamydia has perfect sensitivity and specificity. Under such assumption, the prevalence of chlamydial infection in the U.S. is 2.2% (CI, 1.8% to 2.8%). However, chlamydia screening tests are not perfect tests and thus prevalence estimates must account and adjust for these imperfections. Statisticians have shown that estimates of disease prevalence based on the assumption that screening tests have perfect sensitivity and specificity can be severely biased. In this work, we use Bayesian methods to provide sensitivity and specificity adjusted estimates of chlamydia prevalence. Based on this method, the adjusted prevalence estimate of chlamydia in the U.S. is 1.1% (CI, 0.002% to 2.02%).

P3.324 A POPULATION-BASED ASSESSMENT OF RACIAL/ETHNIC DISPARITIES IN GONORRHOEA RATES

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Background Measured incidence rates of Sexually Transmitted Infections (STIs) are substantially higher among blacks compared to whites in the US. However, population-based data sources, such as routine STI surveillance systems, often lack information on race/ethnicity for the majority of cases. We compared black-white differences in gonorrhoea rates using both individual and neighbourhood-level measures of race/ethnicity.

Methods Publicly-available aggregate data on the number of New York City (NYC) adult gonorrhoea cases in 2009 by race/ethnicity and sex were obtained from the NYC Department of Health and Mental Hygiene's online system for NYC's 42 neighbourhoods. The proportion of black residents for each neighbourhood was obtained from census data.

Results The citywide gonorrhoea rate in 2009 was 81 per 100,000 (median for 42 neighbourhoods [median]: 29; intraquartile range across 42 neighbourhoods [IQR]: 2–105); 116 per 100,000 for males (median: 44; IQR: 11–177); and 47 per 100,000 for females (median: 10; IQR: 0–67). Race/ethnicity data were missing for 49% of cases (median: 48%; IQR: 36%–61%). Using data on cases with complete information on race/ethnicity, gonorrhoea rates were 225 per 100,000 (median: 204; IQR: 108–321) among non-Hispanic blacks, compared with 33 per 100,000 (median: 6; IQR: 1–37) among non-Hispanic whites. The median black-white difference in gonorrhoea diagnosis rates was 104 per 100,000, and varied substantially across neighbourhoods (IQR: 23–223). Neighbourhoods in the lowest quartile of the proportion of black residents (where 0.1%–0.4% of neighbourhood residents were black) had the lowest mean gonorrhoea rate 33 per 100,000, compared to 81, 162, and 224 in the 2nd, 3rd and 4th quartiles (where 35%–76% of neighbourhood residents were black), respectively ($p < 0.001$).

Conclusions Analyses using individual-level and neighbourhood-level race/ethnicity measures both suggest substantial black-white differences within and across NYC neighbourhoods. More complete race/ethnicity information among persons diagnosed with gonorrhoea is critical to elucidate possible structural/neighbourhood determinants of black-white differences.

P3.325 EVALUATING CONSISTENCY IN REPEAT SURVEYS OF MEN WHO HAVE SEX WITH MEN (MSM) USING RESPONDENT-DRIVEN SAMPLING IN ZANZIBAR ISLAND, ZANZIBAR - TANZANIA

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Background This study assessed the comparability of respondent-driven sampling (RDS) as a sampling and recruitment method by comparing two cross-sectional surveys conducted among MSM in Zanzibar using RDS in 2007 and 2011.

Methods We conducted community-based behavioural surveillance studies in Zanzibar using respondent-driven sampling (RDS) to recruit 509 MSM in 2007 and 344 in 2011. We used crude and RDSAT-adjusted descriptive statistics to assess differences between the samples.

Results Compared to 2007, participants in 2011 were significantly younger (31.4% vs 9.9% were younger than 19, $p < 0.001$), more likely to have been tested for HIV in the last year (53.7% vs 10.6%, $p < 0.001$), ever tested (68.2% vs 18.8%, $p < 0.001$), and less likely to have injected drugs in the last 3 months (1.0% vs 23.2%, $p < 0.001$). In 2011, 12 (2.6%) tested positive for HIV; in 2007, 65 (12.3%) were positive ($p < 0.001$).