external causes were the most common COD among IDUs. Non AIDS mortality increased sixfold since 1997 (36–226), with particular increases in cardio/cerebrovascular disease, non-AIDS defining malignancies and external causes. Infectious diseases (mostly respiratory) was the most common underlying cause of non AIDS deaths for MSM and heterosexuals aged 15–59: (38% and 36% respectively) and also high among IDUs (35%). External causes (mostly due to overdose and suicide) was the most common COD among IDUs (36%) and high among MSM (19%). Cardio/cerebrovascular disease and non AIDS malignancies accounted for 16% and 11% of non-AIDS deaths (15–59 years) respectively. Three quarters (76%) of all AIDS deaths and 47% of non AIDS deaths occurred within a year of diagnosis.

Conclusion Overall mortality rates in HIV positive persons have substantially declined in the HAART era but remain high compared to the general population. Clinical AIDS associated with late presentation continues to account for the majority of deaths. Our analyses also reveal that a disproportionate number of deaths are due to infectious diseases, overdose and suicide occur in this population, many of which may be preventable. Surveillance of non-AIDS causes of death is critical in the HAART era.

P1-S3.05 ATTRIBUTABLE PROPORTION OF TUBAL FACTOR INFERTILITY CAUSED BY CHLAMYDIA: AN ESTIMATE BASED ON SEROLOGICAL EVIDENCE ADJUSTED FOR TEST RESOLUTION

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Background Many published studies compare the prevalence of *Chlamydia trachomatis* (CT) antibody in women with Tubal Factor Infertility (TFI) and a control group. In principle these studies can be used to estimate the attributable fraction of TFI caused by CT, however it is necessary to account for the sensitivity and specificity of the antibody tests employed.

Methods We use sensitivity and specificity estimates from a discrepancy analysis by Morre (2002), and a study by Wills (2009) in which specificity of antibody test results was assessed in children, to derive estimates of the resolving power of three peptide-based assays and MIF; this is a reflection of the difference between sensitivity and false positive rates. Based on studies of antibody levels in different settings we adopt a model which assumes that antibody levels in women whose TFI is caused by CT are higher than levels in control women or those whose TFI has other causes. Applying this model to the data from Land (2003) we find strong support for the hypothesis of higher antibody levels in CT-related TFI, and for the estimates of test resolution from earlier studies. Using a range of assumptions about cumulative incidence of CT in the control group we were able to derive a range of estimates for the proportion of TFI cases caused by CT.

Results Our results suggest that the sensitivity of antibody tests in women whose TFI was caused by CT is higher than in women who have previously had CT but whose TFI was due to another cause and control women. Based on our estimates of the resolving power of the tests from the Morre (2002) and Wills (2009) studies we estimate the proportion of TFI episodes that are due to Chlamydia to be between 20% and 45%. Conclusions By adjusting for the sensitivity and specificity of tests it is possible to derive a quantitative estimate of the causal rate of CT in TFI. Taken together with other findings our results suggests that detailed studies of antibody levels can be used to shed further light on the causal rate of CT.

Epidemiology poster session 3: Burden of disease: PID

P1-S3.06 PREVALENCE AND DETERMINANTS OF *NEISERIA GONORHOEA* AND CHLAMYDIA INFECTIONS AMONG GYNAECOLOGICAL PATIENTS WITH PELVIC INFLAMMATORY DISEASE AT UNIVERSITY TEACHING HOSPITAL, LUSAKA

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Methodology This was a descriptive cross sectional study conducted on women presenting clinically with pelvic inflammatory disease to the outpatient department of obstetrics and gynaecology at University Teaching Hospital in Lusaka. Behavioural and demographic variable were collected through questionnaire. Endo-cervical smear was obtained and screened for gonorrhoea and Chlamydia using respective rapid test and gram stain for gonorrhoea.

Results 43 (37%) of a total 116 respondents had gonorrhoea but no Chlamydia was isolated. 114 (98.3) had sexual partners. 101 had steady sexual partners, 19 had casual partners and 9 had anonymous sexual partners with 37 (36.6%), 10 (52.6%) and 6 (66.7%) gonorrhoea isolation respectively. Some had multiple sexual partners. Gonorrhoea was isolated from 4 (28.6%) of the 14 respondents who had one new sexual partner, and all who had two or more sexual partners had gonorrhoea isolated. Gonorrhoea isolation in relation to frequency of sexual intercourse per week was as follows: once 1/13 (7.7%), twice 2/11 (18.2%), thrice 3/11 (27.3%) and more than three times 32/65 (49.2). Gonorrhoea was also higher in those who had sex with casual or anonymous sexual partner under influence of alcohol 6/11 (54.5%) or obtained anonymous sexual partner from Market, shopping canter 4/5 (80%), street, bar, disco, or night club 7/9 (77.8%). Gonorrhoea detection was as follows: 18/36 (50.0 %) for those with adnexial tenderness, 21/45 (46.7%) with inflamed cervix, 37/92 (40.2%) with lower abdominal tenderness and 32/87 (36.8%) with normally appearing cervix.

Conclusion The prevalence of *Neiseria gonorrhoea* was 37% detected. There was no Chlamydia isolated. Low socio-economic status and young age were the higher risk. The sexual risk behaviours associated were; the number of casual or anonymous sexual partners, and non-use of condoms. Lower abdominal pain and tenderness with cervical motion and adnexial tenderness were the major sign.

P1-S3.07 RELATION BETWEEN FEMALE INFERTILITY AND SEXUALLY TRANSMITTED GENITAL INFECTIONS

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Background Sexually transmitted genital infections can bring about severe consequences, among them the leading cause of pelvic inflammatory desease (PID), which can lead to infertility. The objective of this study was to determine the relation between female infertility and sexually transmitted genital infections.

Methods An analytic study of cases and controls was carried out in Ramón González Coro Gyneco-obstetric Hospital, Cuba, 2009. The studied cases were 89 infertile women with tube obstruction who were assessed in infertility consultations, and the controls were carried out in 100 pregnant women who were about to give birth. Vaginal and endocervical secretion samples were taken. Genital micoplasma was present; it was determined through bacteriological culture techniques. *Trichomonas vaginalis*, *Candida* spp, Bacterial vaginosis, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, as well as the presence of other genital pathologicals; were investigated. The test

of exact probabilities of Fisher was carried out. A t student test was also done to determine significant defferencies among age averages. The RR was estimated by means of OR in tables 2×2, and its statistic meaning was determined through a CI at 95%, the aproximation of Woolf was used.

Results The age average in infertile women was of 30.4 years and in fertile woman 24.3 years. (4.486 -07), which is a highly significant difference. Bacterial vaginosis was detected in 72% of the infertile women and 30.9 % of pregnant women. *Candida* spp in 20% of infertile women and 65.4% of the controlled group. The presence of a highly significant statistic difference was proved when Fisher Test was applied. This difference was related to the distribution of microrganisms in both groups ($p<0.0001$). *Mycoplasma hominis* was isolated in 17% of infertile women and in 10% of fertile women. In the group of infertile women, *Ureaplasma urealyticum* was obtained in 42.70% of positive cultures; while in pregnant women, 2% was obtained. *U urealyticum* was not isolated in 57.30% of the infertile woman and in 98% of the pregnant ones. OR 83.92. CL for OR at 95% (17.37 to 397.05) statistically significant. In 54.30% of the infertile women and 98% of the pregnant ones, *Chlamydia trachomatis* was not isolated.

Conclusions The presence of bacterial vaginosis, *U urealyticum*, *C trachomatis* resulted to be a risk factor of female infertility.

P1-S3.08 PELVIC INFLAMMATORY DISEASE (PID) IN ADOLESCENTS AFTER TREATMENT FOR CERVICITIS

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Background We did a prospective study of incarcerated adolescents who had been treated for gonorrhoeal and/or chlamydial cervicitis to determine what proportion subsequently developed PID.

Methods We performed the study at the Harris County Juvenile Detention Center, Texas, where PID is relatively common. At the time of their mandated medical assessment, all incarcerated women submitted first-catch urine samples for chlamydia and gonorrhoea testing. We used Gen-Probe NAAT assays. At the time of treatment among those infected, we performed bimanual pelvic examinations to determine if they had PID. We used the PID diagnostic criteria of the US Centers for Disease Control and Prevention: the presence of adnexal or cervical motion or uterine tenderness. The bimanual examinations were performed by one of three experienced practitioners. We treated infected patients with no evidence of PID for chlamydial and gonococcal cervicitis with 1 gm of azithromycin and 400 mg of cefixime, even if they were positive for only one of the two organisms. We treated for both organisms in case that one test was falsely negative. Treatment was observed by clinic staff; if the medicine was vomited, treatment was repeated following the administration of an anti-emetic. We followed all treated women for 30 days or until released, to determine if they developed PID after treatment for cervicitis. During incarceration, they had no opportunity for sexual intercourse.

Results We evaluated 61 adolescents with no evidence of PID, who were treated for chlamydia and gonorrhoea between 29 March 2010 and 27 December 2010. Their mean age was 15.6 (SD 1.2) years; 45% were black, 31% Hispanic, and 24% white. Duration of follow-up after treatment ranged from 6 to 30 days. During follow-up, 8 of 62 (13%) developed lower abdominal pain and had bimanual pelvic examination findings that supported the diagnosis of PID. All but one patient developed PID at least 10 days after cervicitis treatment (range 3–30 days).

Conclusion In incarcerated adolescents treated for gonorrhoeal and/or chlamydial cervicitis, 13% met the criteria for PID in the month subsequent to treatment, even though their therapy was directly observed, and they were not re-exposed to these organisms. Our data suggest that appropriate treatment for cervicitis does not rule out the possibility of subsequent PID even without exposure to gonorrhoea or chlamydia.

P1-S3.09 ESTIMATING THE INCIDENCE OF PID FOLLOWING CHLAMYDIA INFECTION IN SEX WORKERS

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Background There is a lack of consensus on the true incidence of PID following chlamydia infection with few published prospective studies. We have used data from an old prospective cohort of sex workers to investigate the association between *Chlamydia trachomatis* and subsequent pelvic inflammatory disease (PID).

Methods 598 sex workers were recruited between 1985 and 1993 in London. Self-reported exposure to chlamydia and gonorrhoea at enrolment, and diagnoses of chlamydia, gonorrhoea, trichomoniasis, bacterial vaginosis (BV), candida and PID during the study were recorded. Chlamydia was diagnosed by direct immunofluorescence.

Abstract P1-S3.09 Table 1 Crude rate and crude and adjusted HRs of PID for all women and classified by exposure to chlamydia and gonorrhoea

	Number of PID cases	Crude rate of PID, per 100 women per year (95% CI)	Crude HR (95% CI)	p	Adjusted* HR (95% CI) (*incident case of gonorrhoea, history of chlamydia and gonorrhoea at enrolment)	p
All women	38	11.33 (8.22 to 15.56)				
Incident case of chlamydia						
No	26	10.10 (6.88 to 14.83)	reference		reference	
Yes	12	17.20 (9.77 to 30.28)	1.87 (0.92 to 3.79)	0.083	1.49 (0.65 to 3.40)	0.341
Incident case of gonorrhoea						
No	32	11.07 (7.83 to 15.66)	reference		reference	
Yes	6	12.90 (5.80 to 28.72)	1.36 (0.55 to 3.38)	0.503	0.82 (0.28 to 2.39)	0.715
Past history of chlamydia						
No	13	7.58 (4.40 to 13.06)	reference		reference	
Yes	17	16.89 (10.50 to 27.16)	2.19 (1.06 to 4.54)	0.035	2.06 (0.99 to 4.30)	0.054
Past history of gonorrhoea						
No	14	9.19 (5.44 to 15.51)	reference		reference	
Yes	20	13.34 (8.63 to 20.74)	1.53 (0.77 to 3.06)	0.226	1.75 (0.81 to 3.80)	0.154