

Oral abstracts from the 2009 Australasian Sexual Health Conference – Gold Coast, Queensland, Australia

1. CONTROLLING HPV ASSOCIATED DISEASE: A GLASS HALF FULL?

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A wide spectrum of disease is associated with persisting infection with human papillomavirus. Vaccines to prevent some HPV infections are effective, safe, and now widely available. Significant challenges remain to ensure their effective deployment. Next generation vaccines may cover more HPV types, and may have therapeutic as well as prophylactic efficacy. However cost benefit analysis will determine how widely new prophylactic vaccines can be deployed, and there are still some significant scientific hurdles for the development of therapeutic vaccines.

2. INTERACTIONS BETWEEN HPV AND THE IMMUNE SYSTEM

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The HPV E6 and E7 proteins play a pivotal role in carcinogenesis and are expressed in both pre-malignant and advanced cervical lesions. Because HPV proteins are foreign to the body, one would expect the immune system to mount a response against these antigens when expressed in the cervical epithelium. Indeed, circulating HPV16 E6, E7 and E2-specific Th1- and Th2-type CD4+ T-cells as well as E6-specific CD8+ T-cells, able to migrate into the skin upon antigenic challenge, were frequently detected in healthy individuals, showing that successful defence against HPV16 infection is commonly associated with the installment of a systemic effector T-cell response against these viral early antigens. In contrast, the development of high-risk HPV-positive CIN to cervical cancer is associated with a HPV-specific T-cell response that fails at least at four different levels. In about half of the patients, PBMC lack the capacity to mount a detectable proliferative response against HPV16 E6, E7 and E2, whereas the other half displayed antigen-specific proliferative responses exhibiting a non-inflammatory cytokine profile. Analysis of the local immune response revealed that in many cases HPV-specific effector T-cells failed to home to CIN lesions or tumours and fail to infiltrate the cancer cell nests. Moreover, the majority of tumour-infiltrating T-cells express programmed death receptor 1 (PD-1), indicating that they have become exhausted and function less well. Furthermore, HPV E6- and E7-specific CD4+ regulatory T-cells can be isolated from CIN lesions, lymph node biopsies and the tumours of cervical cancer patients indicating that the immune response in these patients is suppressed at both the induction and effector level. The underlying mechanisms causing this dysfunctional immune response involves the activation of HPV-specific T-cells in a wrong microenvironment due to HPV-mediated suppression of innate immunity, the presence of immunosuppressive cytokines and the lack of proper danger signals in the lesion. We have used these data to guide us in developing an immunotherapeutic vaccine strategy and showed that the restoration of Th1/CTL response against the early antigens results in the regression of HPV-induced lesions in the majority of patients. However, the counterattack of regulatory T-cells and improved homing is still required for this strategy to become successful in patients with cancer.

3. A STUDY OF PROVISION OF HIV NEGATIVE TEST RESULTS BY TELEPHONE TO CLIENTS ATTENDING A SEXUAL HEALTH SERVICE

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Current NSW Health HIV Testing Policy (2005) recommends all HIV negative test results should be provided in person, whereas National HIV testing policies in Australia, New Zealand, UK and US (2006–08) all endorse provision of negative HIV test results by telephone when appropriate. Providing results in person remains a resource intensive method of service delivery when more efficient alternatives, such as providing results by telephone, could be utilised. In addition, a significant proportion of clients fail to return to collect results in person and therefore fail to benefit from post-test discussion on safer sex and HIV avoidance strategies which could be delivered by telephone.

Our study will determine acceptability and feasibility of providing HIV negative test results by telephone to clients attending an urban Sexual Health Service in Sydney. We will assess: rate of non-return for receiving HIV negative test results by telephone compared to rate of non-return for those receiving results in person; satisfaction of clients and preference for delivery of future HIV test results; and associations between non-return for HIV test results and client characteristics such as age, gender and risk factors.

Current evidence from overseas suggests it is acceptable and feasible to provide negative HIV tests results by telephone, but there has been no published prospective study of this in the contemporary Australasian Sexual Health setting. We will present data from our study.

4. SCREENING FOR SYPHILIS AS PART OF HIV MONITORING INCREASES DETECTION OF ASYMPTOMATIC SYPHILIS AMONG HIV INFECTED MEN WHO HAVE SEX WITH MEN

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Syphilis continues to be a significant public health problem among HIV infected men who have sex with men (MSM) internationally. This study aimed to determine whether the routine inclusion of syphilis serology in the blood tests that are usually performed as part of HIV monitoring improves the detection of early syphilis among HIV infected MSM.

We examined the effect of this intervention, implemented in January 2007, on the detection of early, asymptomatic syphilis among HIV infected MSM attending the Melbourne Sexual Health Centre, Australia, and compared this with results from the previous clinic policy of annual syphilis screening. To assess the effect on the duration since infection, we took the midpoint between last negative serology and time of diagnosis and compared the duration between the midpoint and diagnosis.

In the 18 months before and after the intervention, the average number of syphilis tests performed per man per year was 1.9 and 3.3 respectively. The proportion of HIV infected MSM tested who were diagnosed with early syphilis during these periods was 3.1% (14/444) and 8.1% (48/587) respectively ($P=0.001$). The proportion of these who were asymptomatic was 21% ($n=3$) and 85% ($n=41$) respectively ($P=0.006$). The median duration between the midpoint since last negative serology and diagnosis was 107 days (range 9–362) and 45 days (range 23–325) respectively ($P=0.018$).

Increased frequency of syphilis screening resulted in a substantial increase in the proportion of men diagnosed with early, asymptomatic syphilis. This simple and low cost intervention probably also decreased the duration of infectiousness, enhancing syphilis control and reducing morbidity.

5. COMPARISON OF SURVEY METHODS TO ACCESS YOUTH AT A MUSIC FESTIVAL – CHLAMYDIA AWARENESS SURVEY

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The primary aim was to compare the acceptability of paper, SMS and web based survey methodology in raising chlamydia awareness in a ticketed music festival, attended by over 50 000 predominantly young people. The secondary aim was to assess chlamydia awareness.

Five-thousand post-card sized pamphlets were printed inviting participation in the SMS or web-based survey in the subsequent six weeks. Alternatively subjects were invited to fill out a paper survey on the day at a dedicated booth. The incentive for participation was entry into a draw for an 8 Gb iPod.

Majority of subjects refused to accept the postcards. Over thousand cards were distributed. The web-based and SMS surveys were completed by sixteen and four subjects respectively.

One hundred and ninety subjects ($M=79$; $F=94$; $UK=17$; mean 24 y) completed the hard copy survey at the booth. Eighty-nine subjects ($t=47\%$; $M=34\%$; $F=52\%$; $UK=11\%$) stated that they had had a Chlamydia test previously. Nine subjects ($M=2$; $F=7$) expressed interest in the postal Chlamydia test. Sixty-four subjects expressed interest in a future survey.

In summary, participation in the survey was limited. Paper-based survey administered onsite was the most popular method, with very limited uptake of either the web- or SMS-based surveys. Possible reasons for this include, (i) lack of attractive incentive (ii) size of the post card and (iii) appropriateness of the venue. Approximately half of the respondents reported having been tested for chlamydia previously. Interest in the postal chlamydia test was minimal.

6. RECONCEPTUALIZING POST TEST COUNSELING: PROVISION OF HIV NEGATIVE RESULTS BY PHONE

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The current legislation in Victoria regarding HIV results requires positive results to be given in person by a health professional accredited in HIV pre and post test counselling. Clinical practice in Victorian sexual health clinics required all men to receive their positive or negative results in person. This presentation will outline the empirical evidence for reconceptualising the way post test counselling is provided for heterosexual men with HIV negative results.

Review of 33 731 HIV test results over a six year period (2002–08) revealed that nine out of 16 368 heterosexual men (0.05%, 95% CI: 0.046, 0.053) tested positive for HIV at the Melbourne Sexual Health Centre (MSHC). All were born in Australia. Three risk factors were identified as predictors of an HIV positive result. These were: unprotected sex in high prevalence countries (0.04%); unprotected sex with known HIV positive female partner (0.006%); and intravenous drug use (0.01%).

The incorporation of these risk factors into pre test counselling consultations has lead to increased confidence in assessing HIV risk in heterosexual men. The provision of HIV negative results by phone for low risk men is now aligned with MSHC policy for low risk women which was instituted in 2008. This practice change has enhanced the quality of pre test counselling to all heterosexual men, improved understanding of risk for clients, reduced clinical demand, decreased clinic visits and waiting times.

7. REVIEW OF PATIENTS DIAGNOSED WITH NON-SEXUALLY TRANSMITTED (STI) ASSOCIATED DERMATOLOGICAL CONDITIONS ATTENDING A SEXUAL HEALTH CLINIC, NEWCASTLE, AUSTRALIA

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To review clients attending a sexual health clinic with a non-sexually transmitted (STI) associated dermatological condition. To review rates of STIs, risk group and attendance behaviour and explore any differences between this group and other clinic attendees.

All patients attending the sexual health clinic from January to December 2008 were included. Patients diagnosed with a non-sexually transmitted associated dermatological condition, coded on the clinic database as either 'dermatological condition' or 'normal anatomical variant' were compared to other clinic attendees. A manual file review was conducted for all 'dermatological condition' clients, to confirm dermatological diagnosis. Demographic and clinical data was collected. Paired *t*-tests were used to compare this group to other clinic attendees during this period.

In 2008, of 1819 clinic attendees, 168 (9.2%) presented with a non-STI associated dermatological condition 135 (7.4%) dermatological condition, 33 (1.8%) normal anatomical variant. This group was older and more likely to be male ($P < 0.05$). Males with a non-STI associated dermatological condition were significantly older than other male clinic attendees ($P < 0.05$), but there was no significant difference in ages between females in either group. Patients with non-STI associated dermatological condition had significantly more clinic visits throughout the year compared to other attendees (3.5 v. 2.9, $P < 0.01$). There was no difference in overall rates of STI diagnosis between groups (1.5 v. 1.4), however, the general clinic population had significantly higher rates of chlamydia (8% v. 2%, $P < 0.05$). There were similar proportions of the clinics' target populations (men who have sex with men, sex workers, injection drug users, young people, indigenous Australians) amongst both groups.

Patients attending an Australian sexual health clinic with non STI related dermatological conditions are often older, male. Apart from this, they are just as likely to fall into clinic target populations and have other sexual health needs.

8. DROP-IN VERSUS APPOINTMENTS FOR YOUTH – ARE MORE 'AT RISK' YOUTH ATTENDING THE SATELLITE SEXUAL HEALTH YOUTH CLINIC SINCE IT BECAME A DROP IN ONLY CLINIC?

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In 2002 Sydney Sexual Health Centre, in partnership with Waverley Action Youth Service, established an outreach youth oriented sexual health service the 'Satellite'. The service is open to those under 24 years of age and provides free, confidential sexual health care, information and condoms. Initially, clients could access the Satellite by either booked appointment or attending on a 'drop-in' basis. In June 2007, as a result of an audit of service utilisation, the clinic attendance mode was changed to a solely 'drop-in' service. We retrospectively analysed the 12 month periods before and after changing to drop-in only service to determine whether the change in mode of attendance altered the number of clients seen and the client demographic profile.

The clinic database was used to extract the number of clients seen, age and diagnoses in the two time periods. In the year before the service delivery change 184 clients attended and 146 were tested for chlamydia, and in the drop-in only period, 187 clients attended, and 159 were tested for chlamydia. There was no significant change in the proportion of clients under 20 years (68% v. 69%, $P = 0.91$). Significantly more cases of chlamydia were diagnosed during the drop-in period (2.7% v. 11%, $P < 0.01$).

We plan to perform a further in-depth analysis on the behavioural profiles of the clients in the two time periods. All medical records will be manually reviewed to extract data from the detailed proforma risk assessment tool, completed prospectively for all Satellite clients, including sexual behaviour, drug and alcohol use, educational, social, environmental and psychological factors.

Significantly more cases of chlamydia were detected in our youth clinic following the change to a drop-in only service. We will analyse prospectively obtained behavioural data to determine whether there was an associated change in the risk profile of the clients.

9. AUTOMATIC SMS REMINDERS DECREASE WAITING TIME AND NON-ATTENDANCE RATE AT A SEXUAL HEALTH CENTRE

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An increasing prevalence of sexually transmissible infections in Australia, along with relatively fixed resources, has led publicly funded sexual health services to explore new methods to improve efficiency. Sydney Sexual Health Centre (SSHC) triages all new and return patients requesting appointments. This was shown to successfully increase the proportion of available sessions utilised by those clients most at risk, but overall non-attendance rates remained high, leading to wasted clinic capacity. In 2006 SSHC developed an interactive electronic appointment system, with inbuilt SMS appointment reminder system, whereby an SMS was sent the day before each appointment. We conducted this review to determine the effect implementation of the reminder system had on appointment waiting times and non-attendance rates.

Over the week there is an average of 96 daily general clinic patient sessions available a day for nurses, doctors and counsellors, of which 50% are booked and 50% open to walk in patients. For each day over 5 week periods before, and after, the introduction the reminder system, the attendance data record was reviewed to determine the period of time until the next available nursing, counselling and medical appointments, and also the proportion of general sexual health appointments for each day for which the client did not attend.

Mean non-attendance rates decreased by approximately half for medical (21% to 12%) and nursing units (24% to 12%) following implementation of the SMS reminder system. Similarly, the wait time for a booked appointment reduced from 7 to 5 days for nursing, and from 2 to 1 day for both medical and counselling units.

Introducing an interactive electronic appointment system, with automated SMS appointment reminders, dramatically improved the utilisation of available clinic capacity at SSHC. The waiting time for clients requesting appointments also decreased, potentially leading to earlier diagnosis and treatment of sexually transmitted infections.

10. THE CORRELATION OF SYMPTOMS WITH RISK ACTIVITIES AND DETECTION OF A WIDE RANGE OF ORGANISMS IN ENDOCERVICAL, LOW VAGINAL AND URINE SPECIMENS FROM FEMALE SEXUAL HEALTH CLINIC ATTENDEES

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Vaginal symptoms have been reported in association with several infections. Likewise, a wide number of organisms have also been reported as being potentially involved in the development of urethritis in males. These include: *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*, *Ureaplasma parvum*, *Ttichomonas vaginalis*, *Mycoplasma hominis*, *Gardnerella vaginalis*, herpes simplex virus types 1 and 2, adenovirus, *Neisseria meningitidis*, *Haemophilus influenzae*, and *Streptococcus pneumoniae*. Little is known of the epidemiology of some of these common occurring organisms in women.

We therefore conducted a prospective study to determine the prevalence of these microorganisms in female attendees at three Sydney sexual health clinics. A Multiplex PCR (mPCR) method was designed using primers and probes for the specific microorganisms. Urine specimens, endocervical and self-collected vaginal swabs were tested.

A total of 216 women were recruited into the study, 102 (47%) of whom were symptomatic at the time of presentation. Symptoms included vaginal discharge, dysuria, urinary frequency and lower abdominal pain.

The correlations of urogenital symptoms, risk factors and detection of these organisms will be presented. Of particular interest will be an analysis of the roles of the organisms most commonly associated with urethritis in men.

The improved ability to detect a wide range of potential pathogens in the urogenital tracts of women will allow a greater understanding of their epidemiology and help clarify their roles in the development of disease.

11. THE EPIDEMIOLOGY OF UROGENITAL MICROORGANISMS DETECTED BY A MULTIPLEX PCR – BASED REVERSE LINE BLOT ASSAY IN WOMEN ATTENDING THREE SYDNEY SEXUAL HEALTH CLINICS

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Abnormal vaginal discharge is one of the commonest presentations for women attending sexual health services. The infective causes include *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, bacterial vaginosis (BV), trichomoniasis (*Trichomonas vaginalis*), and candidiasis (usually caused by *Candida*

albicans). Current clinical practice is to test for these conditions only. However, a range of other pathogens has been implicated, but existing technologies render their routine identification impractical.

Multiplex polymerase chain reaction–based reverse line blot (mPCR-RLB) assays allow for the rapid detection of multiple organisms in low concentrations. This method was previously validated to detect the following 14 microorganisms: *C. trachomatis*, *N. gonorrhoeae*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*, *Ureaplasma parvum*, *T. vaginalis*, *Mycoplasma hominis*, *Gardnerella vaginalis*, herpes simplex virus types 1 and 2, adenovirus, *Neisseria meningitidis*, *Haemophilus influenzae*, and *Streptococcus pneumoniae*.

We examined 216 women from three sexual health clinics in Sydney (with and without vaginal symptoms) and obtained urine specimens, endocervical and self-collected vaginal swabs, which were analysed by the mPCR-RLB method.

Results were available from all 216 women. *C. trachomatis* was detected in at least one site in 8 women (3.7%), *N. gonorrhoeae* in 1 (0.5%), *T. vaginalis* in 2 (0.9%), HSV-1 in 6 (2.8%), *U. urealyticum* in 52 (24.5%), *U. parvum* in 103 (47.7%), *M. genitalium* in 10 (4.6%), *M. hominis* in 27 (12.5%), *H. influenzae* in 11 (5.1%), *G. vaginalis* in 112 (51.9%) and Adenovirus in 3 (1.4%). HSV-2, *S. pneumoniae* and *N. meningitidis* were not found in any specimens. Infection with multiple organisms was detected in 105 cases.

mPCR-RLB was a convenient method to rapidly identify a wide range of microorganisms from urine, endocervical and self-collected swabs using a single laboratory method. Greater use of such technologies may help improve our understanding of these organisms and potentially reduce the burden of disease.

12. MAKE CONTACT: A COMPARITIVE STUDY OF CONTACT TRACING STRATEGIES FOR CHLAMYDIA

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A pre and post intervention study design was used to evaluate a new resource, a contact tracing card for Chlamydia, using qualitative contact tracing outcomes. Clients, >18 years, diagnosed with Chlamydia at the Pacific Clinic and consenting to participate, were interviewed by telephone, two weeks after being advised of the need for contact tracing. Information was collected on contact tracing outcomes and methods. Results were also compared to a pre study audit.

There were 35 subjects in both the intervention phase (IP) (June 08–Jan. 09) and the pre intervention phase (PIP) (Nov. 07–May 08). The study subjects were similar in age in both the IP and PIP (mean age 26.2 years v. 23.3 years). The majority in each phase were male (62.86% in both phases). In the IP more subjects reported only opposite sex partners (94.29% v. 65.71%).

The ratio of contacts notified to index cases was slighter higher in the IP than in the PIP (1.9 contacts: index v. 1.8 contacts: index), but the ratio of contacts known treated to index cases was the same in both phases (0.9 contacts: index). Both outcome measures were higher in the two phases of the study compared to the audit results.

Contact notification was in person or by telephone for the majority of contacts in both phases. In the IP, 8 (34.8%) of 23 subjects who recall being given the card passed it on to a contact. Thirteen subjects found the card useful. Two subjects accessed the website listed and both reported it was useful. In the PIP, eight (50%) of the sixteen index cases who reported being given a letter passed this on to a contact.

The intervention studied, a contact card, did not produce appreciable differences in contact tracing outcomes compared to the PIP.

13. CONTENT ANALYSIS ELICITING THE 'REAL' SEXUAL HEALTH CONCERNS OF ADOLESCENT GIRLS USING AN UNCONVENTIONAL SOURCE

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There is a mismatch between the sexual health issues commonly associated with the adolescent age group and sexual health issues as perceived by adolescents. Better understanding of the sexual health concerns of this target group would enhance communication and build rapport between health professionals and adolescent patients.

A content analysis of 1000 systematic randomly selected (1 in 15) unsolicited emails submitted to the health column of an Australian adolescent girls' magazine was conducted over a 6 month period. The emails were categorised into 3 main foci of concern: Context of Concern, Health Issue of Concern and Advice Sought for Concern. Within the Health Issue of Concern, emails were further divided into 5 subcategories: sex, body, relationships, mind and other. This paper focuses on a sub-sample of results specifically relevant to sexual health.

The great majority of all emails (80%) expressed concerns about sex (32.9%) and their body (47.1%). Concerns within the body and sex categories ranged enormously, but frequently expressed intimate descriptions of anatomy, sexual practices (including masturbation) and relationships. The proportion of concerns about sexual health issues commonly associated with this age group (such as pregnancy, contraception and sexually transmitted infections) was relatively small.

A deeper understanding of the sexual health concerns and anxieties of adolescents will enable health professionals to engage more effectively with this target group. By addressing issues other than just pregnancy, contraception and sexually transmitted infections, the delivery of age appropriate sexual health advice and services can improve.

14. TRENDS IN CHLAMYDIA POSITIVITY OVER TIME AMONG WOMEN IN MELBOURNE, VICTORIA

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We present the results of an analysis of computerised client records at Melbourne Sexual Health Centre. This analysis aimed to determine whether chlamydia positivity among female clients has changed over time after adjusting for demographic, clinical and sexual risk factors associated with chlamydia infection.

Computerised records for all heterosexually active female clients who attended the clinic for the first time between 2003 and 2007 and were tested for chlamydia, were included in the analysis. Chlamydia diagnostic methods were constant during this time. Chlamydia positivity estimates and 95% confidence intervals were calculated and logistic regression was used to assess any possible change in chlamydia positivity over time adjusting for demographic, clinical and sexual risk factors. National chlamydia surveillance and testing data and antibiotic utilisation data were also analysed and any trends over time evaluated using linear regression.

The average age of the 10,498 women tested was 27.7 years (median 25.7 years, range 12.2 to 80.7 years). The overall prevalence of chlamydia among female clients during the study period was 5.9% (95% CI: 5.5%, 6.4%). Chlamydia positivity increased each year from 4.2% in 2003 to 6.7% in 2007 ($P < 0.01$). After adjusting for other factors, chlamydia positivity increased on average 13% per year (OR = 1.13; 95% CI: 1.06, 1.20). The average daily defined dose of antibiotics effective against chlamydia declined significantly between 1992 and 2002 (from 20.2 to 12.6 per 1000 population; $P < 0.01$) at a time when chlamydia positivity across Australia was increasing (from 9.4% to 10.7%; $P = 0.06$).

These data suggest that the true prevalence of chlamydia in Australia is rising. One possible and biologically plausible explanation for this, is that fewer antibiotics are being prescribed that would inadvertently treat asymptomatic chlamydia infection.

15. SEXUAL HEALTH NEEDS OF NSW SEX WORKERS: THE CHALLENGES AND OPPORTUNITIES FOR SERVICES PROVIDERS IN PROVIDING AN EQUITABLE AND INTEGRATED APPROACH TO SEXUAL HEALTH PROMOTION

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The Sex Workers Outreach Project (SWOP) has an established and effective program of peer led harm reduction outreach to specific groups within the sex work profession including street based sex workers who inject drugs and migrant sex workers. These populations have a diversity of health needs and may face many barriers to equitable service access.

Street based sex workers may be homelessness, suffer violence, and be subjected to stigma and discrimination. The illicit nature of drug use and/or sex work can also limit their ability to access health services.

Migrant sex workers may not have access to culturally appropriate service provision and health information is required in many languages. SWOP peer educators have the credibility, trust and rapport in accessing sex industry premises to deliver health education messages for these workers.

SWOP works to address these issues by partnering with community service organisations and building their capacity to respond appropriately to the needs of sex workers and by empowering sex workers to access health and support services.

Collaborative approaches can improve service delivery to migrant sex workers by contracting experienced sexual health educators to provide outreach services, through effective peer education and by facilitating improved access to sexual health clinics.

This presentation will outline the needs of both male and female street based sex workers and migrant sex workers. Recommendations on addressing these needs will be outlined.

16. LEGAL ASPECTS OF SEX WORK ACROSS AUSTRALIA

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No Abstract Available.

17. RAPID DECLINE IN GENITAL WARTS AFTER THE IMPLEMENTATION OF A NATIONAL QUADRIVALENT HUMAN PAPILLOMAVIRUS VACCINATION PROGRAM FOR YOUNG WOMEN

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Australia provided free quadrivalent human papillomavirus (HPV) vaccine to 12–18 year old girls in a school-based program from April 2007, and to women ≤ 26 years through general practices from July 2007.

To determine if the Australian HPV vaccination program has had a population impact on presentations of genital warts.

The proportion of new clients with genital warts at Melbourne Sexual Health Centre (MSHC) from January 2004 to December 2008.

36 055 new clients attended MSHC between 2004–08 and genital warts were diagnosed in 3826 (10.6%; 95% confidence intervals (CI): 10.3–10.9). Clinical prevalence ratios (RR), and 95% CIs were calculated for the proportion of new clients with genital warts for 2004–07 combined compared to 2008. The proportion of new clients with genital warts was significantly lower in 2008 than 2004–07 for men (RR = 0.82 (95% CI: 0.75–0.90)) and women (RR = 0.62 (95% CI: 0.54–0.72)). Analysis of subgroups found only women <28 years (RR = 0.52 (95% CI: 0.44–0.63)) and heterosexual men (RR = 0.83 (95% CI: 0.74–0.92)) but not homosexual men (RR = 0.93 (95% CI: 0.73–1.17)) or women ≥ 28 years (RR = 0.91 (95% CI: 0.70–1.17)) not had a significant fall in genital warts in 2008 compared to 2004–07. From January to December 2008 there was a significant decline in the monthly presentations for warts among women <28 years (P for trend = 0.03).

Our data suggest a rapid and marked reduction in the incidence of genital warts among vaccinated women may be achievable through an HPV vaccination program targeting women, and supports some benefit being conferred to men. A reduction in genital wart diagnoses in heterosexual but not homosexual men is consistent with reduced heterosexual transmission of HPV as a result of female vaccination.

18. LONG-TERM NATIONAL SURVEILLANCE FOR GENITAL WARTS THROUGH AUSTRALIAN SEXUAL HEALTH SERVICES

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The quadrivalent vaccine Gardasil is being used in the National HPV Vaccination Program in Australia. The program is providing free vaccine to all females 12–26 years since mid 2007, with ongoing vaccination of 12 year old females after 2009.

This national collaboration for the surveillance of genital warts through Australian Sexual Health Clinics is to monitor the population impact of the vaccine. Genital warts should be the earliest clinical indicator of the vaccine effect.

We have collated de-identified data on priority populations attending 10 geographically dispersed Sexual Health services in all Australian states and territories. The clinics were selected as together they are visited by $\sim 20\,000$ clients per year, and see a large number of people from populations at risk of genital warts including young heterosexual women and men and men who have sex with men, and have access to large numbers of traveller (backpackers).

All data are extracted from routine clinical databases. Clinics were asked to send retrospective data on all patients to establish a pre-vaccine prevalence. We have targeted clinics that see high proportions of backpackers so we expect to be able to contrast genital warts rates between patients who received the quadrivalent (Australian residents) and bivalent vaccines (UK residents).

This will be the first national surveillance system for the most common symptomatic problem in Australian sexual health services. This presentation will provide the first data from this project.

19. A PHASE 1B MULTICENTRE STUDY OF HPV6 L1 VIRUS-LIKE PARTICLES AS ADJUNCT IMMUNOTHERAPY FOR ANOGENITAL WARTS

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A phase 1b randomised placebo controlled blinded dose ranging study of HPV6 L1 Virus-Like Particles (VLPs) as therapy for genital warts. Men (201) and women (171) ages 18–65 years with anogenital warts present for 3 months and recurrent after prior treatment were treated with destructive therapy of their anogenital warts and two injections of HPV6b VLPs without adjuvant (1 mcg, 5 mcg, 25 mcg) or placebo, 4 weeks apart.

The primary outcome, wart resolution/recurrence after 2 months, was evaluated per protocol at each of two recruitment sites, and separately for males and females.

Overall, there was a significant difference in wart outcome between the two sites. One site used only cautery as destructive therapy and the treatment success rate in the placebo group (37/52 complete resolution (CR) = 71%), was not significantly improved by immunotherapy. The other site used a range of treatment modalities, and a lower treatment success rate was observed in the placebo group (11/33 CR = 33%). At this recruitment site, outcome for males but not females was significantly improved by immunotherapy ($n=87$) in a vaccine dose dependent fashion (CR/PR (partial resolution) v. NR (no resolution); X^2 for trend 11.2; 1DF $P<0.001$). Post hoc analysis by treatment mode was consistent with the hypothesis that improvement with immunotherapy was confined to subjects receiving destructive treatment other than cautery.

This study confirms the findings of a previous open label study that immunotherapy with HPV6b VLPs without adjuvant can improve the probability of resolution of wart disease following therapy, and suggests that the benefit may be confined to those receiving non-cautery destructive therapy.

20. THE EFFICACY OF QUADRIVALENT HPV (TYPES 6/11/16/18) VACCINE AGAINST HPV-RELATED GENITAL DISEASE AND INFECTION IN HIV NEGATIVE YOUNG MEN

R. J. Hillman, on behalf of the Scientific Advisory Committee for the Quadrivalent HPV Vaccine Efficacy Study in Men

STI Research Centre, University of Sydney, Westmead, NSW, Australia.

In males, anogenital infection with human papillomavirus (HPV) can lead to genital warts, penile, perineal, perianal, and anal neoplasia and cancer. In addition, male HPV infection contributes significantly to infection and subsequent cervical disease in women.

This study examined the efficacy of the quadrivalent HPV (type 6/11/16/18) L1 virus-like particle vaccine against incidence of HPV 6/11/16/18-related external genital lesions (EGL) (external genital warts, penile/perineal/perianal intraepithelial neoplasia, and penile/perineal/perianal cancer) as well as genital HPV 6/11/16/18 infection in young men (both heterosexual men and men having sex with men). In this randomised, double-blind, placebo-controlled trial, 4,065 HIV negative young men aged 16–26 years were administered quadrivalent HPV vaccine or placebo at enrollment, month 2, and month 6. Subjects underwent detailed genital exams as well as swabbing of the penis, scrotum, and perineal/perianal region at enrollment, month 7 and at 6-month intervals afterwards. After enrollment, all new lesions were biopsied for pathological diagnosis and PCR testing. Efficacy analyses were performed in a per-protocol population (PP) seronegative at day 1 and HPV DNA-negative from day 1 through month 7 to the relevant vaccine HPV type. Median follow-up was 2.3 years (starting from month 7).

Among 1,397 vaccine subjects and 1,408 placebo subjects in PP, efficacy against any HPV 6/11/16/18-related external genital lesions was 90.4% (95% CI: 69.2, 98.1). Vaccine efficacy against condyloma and PIN was 89.4% (95% CI: 65.5, 97.9) and 100% (95% CI: <0, 100), respectively. Vaccine efficacy against HPV 6/11/16/18 persistent infection and any time DNA detection was 85.6% (97.5% CI: 73.4, 92.9), and 44.7% (95% CI: 31.5, 55.6), respectively. Slightly more injection-site adverse experiences were seen among vaccine recipients.

The quadrivalent HPV vaccine was efficacious in reducing the burden of HPV 6/11/16/18-related EGL and infection in young men aged 16–26 years naïve to the relevant HPV type at baseline.

21. ANAL DYSPLASIA SCREENING IN A REGIONAL AUSTRALIAN POPULATION

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Human papilloma virus (HPV) and receptive anal intercourse have long been associated with anal cancer. As with cervical cancer, precursor dysplastic lesions may be detected by cytological smears. A study was initiated in a regional Australian centre to determine the prevalence of anal dysplasia and its evolution over time in a presumed high risk group.

Between March 2002 and February 2009, men who have sex with men presenting to the Cairns Sexual Health Service were invited to participate in a pilot screening program. Demographic and clinical data were collected, and an anal smear taken for Papanicolaou (Pap) cytology. Cytology results were classified as unsatisfactory, no dysplasia, low-grade intra-epithelial lesion (LSIL) or high-grade intra-epithelial lesion (HSIL). Subjects with HSIL were offered high resolution anoscopy (HRA) with acetic acid staining. Where seen, high-grade dysplastic lesions were biopsied and/or ablated with trichloroacetic acid (TCA).

In the study period, 255 anal Pap smears were performed on 74 subjects, 40.5% of whom were HIV-positive. Median follow-up time was 1.12 years (range 0–6.6). Twenty-three men (31.1%) either had HSIL at the outset or progressed to HSIL during follow-up. High-grade lesions seen at HRA were typically discrete and unifocal. No invasive anal cancers were detected. The prevalence of HSIL was 26.7% in HIV-positive subjects and 34.1% in HIV-negative subjects (not statistically significant). Of the 13 who underwent HRA with treatment by biopsy and/or TCA, the remission rate was 76.9%, compared to 40% for those who had no treatment. This difference did not quite reach statistical significance due to the small numbers involved.

Anal Pap smears are a simple and efficacious method of screening for anal dysplasia in an at-risk population. Regular HRA is an effective means of monitoring high-grade dysplastic lesions, although larger numbers would be required to determine the efficacy of eradication of local treatments.

22. THE EFFICACY OF CYTOBRUSH CYTOLOGICAL SAMPLING IN ANAL DYSPLASIA SCREENING

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Anal cancer is rare among men in general but is at least 17 times more common among men who have sex with men (MSM). Anal smear cytology with Papanicolaou staining has been proposed as a screening test, as for cervical cancer. The aim of this study was to look at the effectiveness of different cytology sampling methods.

MSM presenting to Cairns Sexual Health Service were invited to participate. Anal smears were taken either with a cotton/Dacron swab blindly from the ano-rectal junction or a cytobrush with the visualisation of a proctoscope.

Of 213 smears, 116 (62%) showed some abnormalities. Further analysis of the abnormal smears showed that 27.3% were low-grade squamous intra-epithelial lesion (LSIL), 25.7% high-grade intra-epithelial lesion (HSIL) and 9.1% atypical squamous cells of undetermined significance (ASCUS). Of 75 smears taken with a cytobrush 2.7% resulted in an inadequate specimen, compared to 17.3% of 127 smears taken with cotton/Dacron swabs ($P=0.002$). There was also a tendency for less ASCUS (2.3% v. 12.4%, $P=0.058$). Smears taken with cytobrush yielded as low a percentage of inadequate specimens as cervical smears in a large state-based registry (2.7% v. 1.4%, $P=0.35$).

We conclude that the cytobrush is an effective implement for cytological sampling of the anorectal junction and possibly superior to cotton or Dacron swabs. Due to the sharp tips of the former, insertion with the direct visualisation of a proctoscope is recommended.

23. POINT OF CARE TESTING

S. Barton

Chelsea & Westminster Hospital, United Kingdom.

The developing technology of point of care tests offers sexual health services many possible advantages. Quicker results, available in clinic should reduce patient waiting and make services more efficient. The removal of the need to transport specimens to a laboratory reduces the risk of their being lost or damaged and is an attractive cost option.

But the governance of POCT is vital to ensure that the tests are accurate, are performed by trained and skilled staff, and that regular quality assurance and audit are performed. This talk will highlight examples of this and suggest that clinical staff need to use strict criteria before implementing new POCT and that we need to have critical appraisal and impact analysis to avoid clinical errors and the exact opposite of the improvements intended.

24. NON-GONOCOCCAL NON CHLAMYDIAL URETHRITIS: WHY THE JURY IS STILL OUT

C. Estcourt

Barts & The London School of Medicine & Dentistry, London, United Kingdom.

The precise aetiology of NCNGUrethritis is not known and its causes are likely to be multiple. Studies have shown an association with several organisms including mycoplasmas & ureaplasmas. *Mycoplasma genitalium* is associated with infertility & PID in women but it can also colonise the genital tract without apparent pathological consequence. Twenty five to 30% of men presenting to STI services in the UK have asymptomatic NCNGUrethritis. The significance of this is unclear. This session will consider the key questions in current understanding of non-gonococcal non chlamydial urethritis.

25. SEXUAL ASSAULT; WHERE ARE WE NOW?

V. Parekh

Canberra Sexual Health Centre (CSHC), Forensic and Medical Sexual Assault Care (FAMSAC) and Clinical Forensics ACT (CFAC), Australia.

Forensic medicine is an emerging speciality.

The following aspects will be addressed in this session

- New advances in forensic medicine. This will include new technologies and ensuring forensic techniques meet the requirements of the court system.
- A review of literature in the sexual assault field in the previous 2 years.
- Sexual Assault Law reform. New legislation has been introduced in various states and territories to address some of the antiquated laws that have been in place for many years.

26. INJURY INTERPRETATION

A. Williams

Victorian Institute of Forensic Medicine.

What exactly are we trying to achieve in interpreting injuries? Who are we interpreting for, what are we trying to say, is there a direct purpose, what can we say, are we qualified to interpret? Most will agree that a great deal of forensic medical practice is based on the sound clinical interpretation of injuries – sometimes non specific minor ones, occasionally quite complex injury patterns.

During this presentation, attendees will be given the sound principles of injury interpretation using a series of photographs of injuries to test (quietly or publicly) their interpretation abilities. Attendees will be reminded of the definitions of injuries (bruise, abrasion, incision, laceration) and some common injury patterns to be aware of in sexual assault patients.

Pre reading: the below definition of interpretation!

Interpretation **in-ter-pre-ta-tion** [in tûrprə táysh'n] (*plural in-ter-pre-ta-tions*) Noun

Definition:

establishment of meaning: an explanation or establishment of the meaning or significance of something

ascription of particular meaning: an ascription of a particular meaning or significance to something

translation: the oral translation of what is said in one language into another, so that speakers of different languages can communicate.

27. VICTIM-CENTRED CRISIS RESPONSE: TENSIONS AND POSSIBILITIES

A. Quadara

Australian Centre for the Study of Sexual Assault, Australian Institute of Family Studies.

It is frequently stated that service responses to sexual assault victim/survivors should be 'victim-centred'. A victim-centred approach is taken to be an inherently good thing, but do we all mean the same thing when we use the term? Currently, it doesn't appear that there is in fact a shared understanding of what it means to be victim-centred, particularly where different agencies are involved in responding to sexual assault, are guided by different organisational philosophies and objectives, and operate with different levels of institutional power.

This presentation draws on literature from community psychology, research examining secondary victimization processes, literature on victims' participation in the legal process and what we know about help-seeking pathways to ask: Can we 'build' a concept of victim-centred that is both coherent across and yet flexible for the different actors who respond to sexual assault? And if this is possible, what are the likely implications for delivering victim-centred services such as forensic, medical and health care?

28. THE VALUE OF ADJUVANT SYSTEMS IN VACCINES FOR SEXUALLY TRANSMITTED INFECTIONS

A. L. Cunningham

Centre for Virus Research, Westmead Millennium Institute, Sydney, Australia.

Immunization remains one of the safest and cost effective ways of controlling infectious diseases. For many decades the emphasis in vaccine research has been on seeking the safest and most immunogenic antigens from the pathogens needing to be controlled. However with an increasing understanding of antigen presenting cells and innate immune mechanisms, especially the TOLL-like receptor system, there has been increasing research into adjuvants and a realisation of their importance in selecting the key mechanism(s) of immune control. Highly purified antigens can provide increased safety but they are often less immunogenic than the whole organism. Therefore combination with adjuvants can enhance their efficacy particularly in the following settings: a need for long-term protection, in relatively immune compromised subjects, highly variable and complex pathogens which have developed immunoevasive mechanisms (HIV, Hepatitis C, TB), for pathogens such as malaria requiring multi-stage immune responses and in the setting of the need for rapid immunity such as with pandemic influenza. Nevertheless, in addition to aluminium salts, which have been available for many decades only a handful of new adjuvants have been recently licenced, including the oil in water emulsion, MF59 and monophosphoryl lipid A (MPL). The mechanisms of action of these newly licenced adjuvants are now being unravelled. Furthermore a whole range of new candidate adjuvants (e.g. Iscomatrix, QS21) which are able to stimulate the different arms of the immune response, are now in development. These new adjuvants are being used in several recently licenced vaccines or those in development, such as for HSV and HPV.

29. DEVELOPMENTS IN DIAGNOSIS OF HSV AND HPV

W. Rawlinson and M. Fennell

Virology, SEALS Microbiology, Prince of Wales Hospital Randwick, NSW 2031, Australia.

Adequate testing for STI agents using specific and sensitive assays underlies the diagnosis and appropriate treatment. Molecular testing for chlamydia, *N. gonorrhoeae*, HSV1, HSV2 and more recently *Mycoplasma* (*M. genitalium*, *M. hominis*), *Ureaplasma* (*U. urealyticum*, *U. parvum*) and HPV types associated with cancers has all been undertaken. Tests using molecular methods are now standard – we and others use commercial multiplex PCR

assays for HSV1/2, HPV, *N. gonorrhoeae*, and in-house assays for chlamydia, mycoplasma, trichomonas, ureaplasma, *T. pallidum*, and several other viral infections transmitted sexually. HPV diagnosis has been available for some time but has acquired more general use with the availability of vaccine in Australia. HPV NAT tests typically test for the most common genotypes associated with cervical cancer as a group, although in-house assays can be used to detect many more subtypes in research settings. Genotyping of HPV with identification of the specific infecting subtype can be undertaken for epidemiological purposes.

Issues that arise in interpreting NAT for HSV and HPV include:

1. the sensitivity compared with culture – for HSV, NAT is more sensitive
2. latent HSV is not detected, but asymptomatic shedding can be
3. NAT tests are more sensitive than other methods
4. most HPV assays detect a similar number (13) and list of genotypes, although assays available detect up to 30 genotypes
5. test cost is likely to decrease further with automation

Overall, HSV and HPV testing is more available, more able to be individualised and of decreasing cost compared to previously. Use of self-sampling, reduced assay costs, and simplification of the assays should make such tests increasingly available for resource-poor settings and increased number of Australians requiring diagnosis of their STI.

30. PUBLIC HEALTH IMPLICATIONS OF HPV AND HSV VACCINATIONS

C. Ooi

Hunter New England Area Health Service, New South Wales, Australia.

Both human papilloma virus (HPV) and herpes simplex virus (HSV) are extremely common worldwide and associated with significant morbidity and mortality. Lack of access to care, testing and treatment has contributed to a health inequity resulting in the burden of disease falling among those in resource poor countries where reliance is placed largely upon condom use for prevention.

Together with genital warts, human papilloma virus (HPV) is the recognised cause of cervical cancer which annually affects nearly 500 000 women globally, killing over half. Although well organised screening programs have been effective for women in developed nations, ~80% of disease is among women in developing nations. 'High risk' HPV genotypes 16 and 18 are responsible for 70% of cases, with low risk genotypes (6, 11) associated with clinical warts. In 2006, a quadrivalent (types 6, 11, 16 & 18) HPV vaccine was licenced, and in April 2007, Australia became the first country to commence a government funded HPV vaccine program targeting females 12–26yrs. More recently, a bivalent vaccine (types 16 & 18) has been made available. These vaccines are readily accessible in other developed nations however, access remains poor where the need is the greatest and the potential public health gain largest. The challenge to reduce cancer burden include cost, and policy and social stigma associated with vaccination for a sexually transmitted agent.

Latency, frequent asymptomatic mucocutaneous shedding and underdiagnosis have contributed to the world wide increase in both HSV1 and 2.

While symptomatic infection may be painful and distressing for the individual, of greater concern is the risk of vertical transmission and neonatal herpes and the role of genital herpes as a biological cofactor in the transmission and acquisition of HIV. Widespread availability of a safe and effective vaccine will be an important step to decrease this burden.

31. SCREENING FOR INTIMATE PARTNER VIOLENCE IN A SEXUAL HEALTH CLINIC – WHO DOES IT AFFECT AND HOW COMMON IS IT?

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In New South Wales it is mandatory for certain healthcare services to screen female clients for recent intimate partner violence (IPV) using a standard proforma screening tool. Since 2003 Sydney Sexual Health Centre has used this tool to screen all new female clients for IPV in the past 12 months. This study retrospectively determined the prevalence of reported recent physical IPV and its associations.

The clinic database was used to identify all first visits by women, and those reporting recent physical IPV. A case control study of women reporting, and the next two age matched women not reporting, recent physical IPV between September 2003 and September 2007 was conducted. Microbiologically confirmed current sexually transmitted infections (STIs) and socio-demographic, behavioural and diagnostic variables were extracted from the clinic database and analysed for association with recent physical IPV using binary logistic regression.

There were 6013 initial attendances by women to the clinic, of whom 313 (5.2%) reported recent physical IPV. There was no association with current acute STIs, but cases were more likely to report current sex work (AOR 1.82, 95% CI: 1.28–2.61), past STI diagnosis (AOR 1.62, 95% CI: 1.06–2.46), recent injecting drug use (AOR 9.00, 95% CI: 2.98–27.3), a previous sexual assault (AOR 2.74, 95% CI: 1.42–5.29), a prior termination of pregnancy (AOR 1.57, 95% CI: 1.13–2.20), and were less likely to be in a current relationship (AOR 0.69, 95% CI: 0.50–0.94) and consistently use condoms in the previous 3 months (AOR 0.67, 95% CI: 0.48–0.94).

Women attending our clinic were almost twice as likely to report physical IPV as were women in a recent Australian population based study. This, together with the association of IPV with sex work, prior STIs and lower condom use, suggest sexual health clinics would be appropriate venues to screen women for intimate partner violence.

32. IS SCREENING ASYMPTOMATIC MEN WHO HAVE SEX WITH MEN FOR URETHRAL GONORRHOEA WORTHWHILE?

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Sexually transmitted infection (STI) screening guidelines for men who have sex with men (MSM) have conflicting recommendations regarding testing asymptomatic MSM for urethral gonorrhoea. While most urethral gonococcal infections in a clinic setting are symptomatic, most infections detected in community based studies are asymptomatic. Studies determining the prevalence of asymptomatic male urethral gonococcal infection in clinic settings have mostly used nucleic acid amplification tests (NAAT) without supplemental assays and very small sample sizes, leading to imprecise estimates. We determined the prevalence of confirmed asymptomatic urethral gonococcal infection among MSM at our Australian sexual health clinic.

Asymptomatic MSM are screened for urethral gonorrhoea using the Roche Amplicor[®] polymerase chain reaction (PCR) and a supplemental porA pseudogene real-time PCR assay, whereas cultures of urethral samples are used for symptomatic men. We used the clinic database to identify all attendances by MSM where a urine or urethral gonorrhoea test was performed between March 2006 and July 2008, and whether the men had any anogenital symptoms at the time of testing. We calculated the prevalence of symptomatic and asymptomatic urethral gonococcal infection with 95% confidence intervals (CI).

There were 4453 attendances by asymptomatic MSM and 2 diagnoses of urethral gonorrhoea in these men. Over this time there were 1213 attendances by symptomatic MSM and 38 diagnoses among these men. Hence the prevalence of asymptomatic urethral gonorrhoea was 0.04% (95% CI: 0–0.1). The prevalence of gonorrhoea among MSM with any anogenital symptoms was 3.13% (95% CI: 2.3–4.3) over the same period.

Despite a high prevalence of symptomatic infection, asymptomatic urethral gonococcal infection was extremely uncommon among MSM seen in our sexual health clinic. Screening asymptomatic MSM for urethral gonococcal infection is not warranted.

33. PREVALENCE OF GENITAL CHLAMYDIAL INFECTION AMONG YOUNG INTERNATIONAL TRAVELLERS IN SYDNEY

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Surveys have found that the sexual behaviour of young travellers is of higher risk for STIs than local counterparts, and clinic-based prevalence of genital chlamydial infections in international travellers has been higher than prevalence in local Australians. However, no community-based prevalence study has been conducted. We aimed to determine the prevalence of genital infection with *Chlamydia trachomatis* among a community sample of young international travellers temporarily residing in 'backpacker' accommodation in Sydney and determine associations with chlamydia in this population.

The study population is self-identified international travellers, aged 18–30 and staying in budget backpacker accommodation in Sydney. Over a four month period, we used convenience sampling to recruit subjects at backpacker hostels. Men provided urine samples, and women provided self-collected vaginal swabs. A specific questionnaire was used to collect data on sociodemographic factors and sexual behaviour.

Recruitment is near completion. To date, we have enrolled 199 men and 153 women. Mean age for the men was 23.9 years; for the women was 23.6 years. The majority were residents of western European countries, and had been travelling for an average of 5.1 months. During the previous three months, the mean number of sexual partners was 2.9 for the men (range 0–20) and 1.8 for the women (range 0–10). Seven chlamydial infections have been detected in the men (prevalence 3.5%) and five chlamydial infections in the women (prevalence 3.3%). Many participants reported high alcohol consumption (median 10, range 0–180 standard drinks of alcohol per week). More complete data will be presented at the conference.

While the prevalence of *Chlamydia trachomatis* in these preliminary data was lower than expected, sexual risk behaviour and alcohol intake was high in many participants. Future health promotion for this population could focus on both sexual and alcohol risks.

34. IS THERE ADEQUATE FOLLOW UP FOR HIV IN GONOCOCCAL INFECTION? A REVIEW OF GONOCOCCAL NOTIFICATIONS IN SOUTH AUSTRALIA 2007–08

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This study aimed to determine the rate of HIV testing among South Australians diagnosed with gonococcal infections within the 12 months preceding notification, within 1 month of notification and at 3 to 6 months post notification.

Notifications of gonococcal infections diagnosed at the Institute of Medical and Veterinary Science (IMVS) in South Australia over the period 1/1/2007–31/12/2008 were analysed. Data were extracted from clinic records for diagnoses at Clinic 275. Diagnoses external to Clinic 275 were

matched by surname and date of birth to the IMVS Laboratory database to determine HIV testing status. A total of 739 notifications were made over the two year period, 234 (32%) were from Clinic 275.

Results: Forty-seven per cent of Clinic 275 clients reported HIV testing in the 12 months preceding notification ($n = 111$). Most clients (89%; $n = 206$) underwent HIV testing within one month of notification. Only 20% of clients ($n = 48$) were tested for HIV at the Clinic within the 3–6 months following their notification. There were no differences in testing rates by gender, but men who reported having sex with men were more likely to have undergone HIV testing in the 12 months prior (69% v. 38%, $P < 0.001$) and to have had follow up testing at 3–6 months post-notification (38% v. 14%, $P < 0.001$) compared with other clients.

Of the 505 external notifications, 19% ($n = 95$) had undergone HIV testing within one month of notification, and 10% ($n = 49$) had undergone testing within 3–6 months of notification.

Given the epidemiologic association between HIV and Gonorrhoea there is the potential to miss some early HIV infections.

35. DEVELOPING KEY PERFORMANCE INDICATORS OF SEXUALLY TRANSMITTED INFECTION CONTROL FOR NORTHERN TERRITORY PRIMARY HEALTH CARE SERVICES (STI KPI PROJECT)

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Bacterial STIs are hyper endemic in many remote Aboriginal communities, despite evidence that they can be effectively controlled. In the Northern Territory (NT), primary health care (PHC) services play an important role in STI control. To date, monitoring the impact of STI control programs has relied on STI notifications, which are a crude marker of service activity. We describe the process for the development of sexual health key performance indicators (KPIs) for PHC services in the NT.

We reviewed national and international literature to identify related KPIs. This identified a range of KPIs, however most were aimed at infection control issues such as intravenous drug use, blood borne viruses, male homosexual transmission and HIV control. While these issues are pertinent in the NT, the major focus is heterosexual transmission of bacterial STIs.

A working group of experienced PHC and sexual health practitioners and researchers was established to review the literature and incorporate local knowledge into KPI development. Drawing on the literature, the working group identified and assessed over forty KPIs and recommended a draft set of 23. The draft set was then reviewed by a larger stakeholder group and are currently being piloted in selected PHC services to assess their feasibility and suitability. The KPIs currently cover: clinic orientated activity such as the amount, quality and timeliness of testing and treatment; prevention strategies; infection rates; and the physical and workforce capacity of the health service and its relationship with the community.

This project has highlighted the limited use of comprehensive sexual health KPIs in Australia, despite considerable funding and program activity in this area. We hope that it will contribute to improved monitoring and consistent assessment of STI control programs, and provide a feasible framework to assist PHC services to enhance existing STI programs.

36. LEGISLATION REQUIRING MONTHLY TESTING OF SEX WORKERS WITH LOW RATES OF SEXUALLY TRANSMITTED INFECTIONS RESTRICTS ACCESS TO SERVICES FOR HIGHER RISK INDIVIDUALS

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In Victoria, Australia, legislation requires sex workers to undergo monthly testing for gonorrhoea (GN), chlamydia (CT) and trichomonas (TV), and 3-monthly serological testing for HIV and syphilis, despite extremely low rates of STIs in female sex workers (FSW). Our aim was to determine the resources used for monthly testing compared with changing to potentially 3 monthly testing, and to determine the number of extra STI that could be potentially diagnosed if these resources were used to test higher risk groups.

Computerized records of patients attending the Melbourne Sexual Health Centre (MSHC) between October 2005 and October 2008 were reviewed.

Consultations with FSW accounted for 15.1% of total consultation time (5,722 of 37,670 h) and of these, 2896 h (7.7%) were used for monthly consultations involving testing for GN, CT and TV but no serology (termed swab only testing).

Only 133 (3.2%) of the 4050 cases of STI (defined as GN, CT, TV, early syphilis, or mycoplasma genitalium) that were detected at MSHC during the study period were among FSWs who underwent swab only testing. 1607 (39.6%) STIs were detected among men having sex with men (MSM).

The STIs detected per 100 h of consultation time was (4 fold) higher for MSM (18) than for FSW (4). If FSW were tested only every 3 months for GN, CT and TV the 2896 h spent on swab only testing would have been available for higher risk clients.

By allocating these 2896 h to other clients, potentially, 388 more STI cases may have been detected if MSM had been seen, or 186 more cases if clients other than FSW were seen.

The current legislation requiring monthly STI testing is compromising the access for higher risk individuals to sexual health. Legislative reform with less frequent testing of sex workers is required.

37. METHODS FOR MAXIMISING RETENTION OF YOUNG WOMEN IN A LONGITUDINAL STUDY OF CHLAMYDIA INFECTION

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Women aged 16 to 25 years can be a transient population and research requiring follow-up contact within this age group may require considerable resources for maintaining retention. We describe methods used to increase retention in a longitudinal study of these women.

The Chlamydia Incidence and Re-Infection Rates study is a cohort study of young Australian women that aims to measure Chlamydia trachomatis incidence over 12 months. Research assistants recruited 1120 women from 30 primary health clinics with 3-monthly self-collected swabs and questionnaires sent through the post. A freecall telephone number, a study email address and website were provided for the participants to notify changes in address. Women received a voucher for each swab returned, to the value of \$10 (AUD) at 3 months, \$20 at 6 and 9 months and \$50 at 12 months. Study packs included gifts such as sweets, condoms or cosmetics. Women were sent a text message (SMS) before follow-up advising them to expect a pack and to report changes in address. Reminders included an SMS after 2 weeks if no response, then up to 5 telephone calls if required.

Overall, 62% of eligible women were recruited. To date, 747 (67%) women should have completed the study. Retention at 3, 6 and 9 months has been 82.9%, 76.6% and 74.5% respectively and is currently 72.4% at 12 months. There has been no difference in retention by age (<21 years v. 21+ years; OR 1.1; 95% CI: 0.8, 1.6) or by clinic (sexual health v. general practice; OR 1.1 95% CI: 0.8, 1.6).

While different methods have not been explored using a randomised study design, a 72% retention is high compared with other similar studies. Employing a research assistant to recruit women, and regular communication via SMS and email has assisted in retaining women during the study.

38. COMPUTER REMINDERS FOR CHLAMYDIA SCREENING IN GENERAL PRACTICE: A RANDOMISED CONTROLLED TRIAL

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The objective of this trial is determine whether a computer alert can prompt general practitioners (GPs) to increase chlamydia testing in young women.

General practice clinics ($n=68$) were cluster randomised to have either a computer alert inserted into their medical records software or no intervention. The alert was programmed to appear whenever a 16 to 24 year old woman consulted a GP, advising the GP to discuss chlamydia testing. All clinicians received a chlamydia educational package. The numbers of individual 16 to 24 year old females women tested for chlamydia and consulted by each GP were collected for two 12 month periods – before the trial and during the trial. GPs completed a questionnaire before and after the trial to ascertain their knowledge and management of chlamydia. A mixed effects logistic regression model to adjust for differences in rates of testing between clinics, GP gender and patient age was used to assess the intervention's impact.

The pre-trial chlamydia testing rate across all GPs was 8.3% per year and rates increased significantly in both groups from 8.0% to 11.9% in the intervention group ($P<0.01$) and 8.7% to 10.7% in the control group ($P<0.01$). After adjustment, the intervention group had a 32% (OR = 1.3, 95% CI: 1.2, 1.5) greater increase in chlamydia testing rates. Female GPs tested more than their male colleagues (OR: 5.1, 95% CI: 4.6, 5.6) and older women (20 to 24 years old) were more likely to be tested than the younger group (16 to 19 year olds) (OR: 1.6, CI: 1.5, 1.8).

A computer alert in to remind GPs to test young women for chlamydia is beneficial in increasing chlamydia test rates. However, other interventions will be needed to increase chlamydia testing rates to levels sufficient enough to have any impact on chlamydia transmission in the population.

39. CHLAMYDIA SCREENING: OVERCOMING BARRIERS TO A COMPLEX INTERVENTION IN THE PRIMARY CARE SETTING

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Chlamydia is a common often asymptomatic sexually transmissible infection which is easily diagnosed yet has serious sequelae if left untreated. Given that 85% of Australians visit their GP at least annually, successful chlamydia screening in the general practice setting may reduce rapidly rising infection rates. However, the addition of public health measures, such as screening, are often poorly adopted in general practice, being an additional burden in an already time-poor setting. Resistance of GPs to changing their practice has been commonly observed, especially with a complex intervention such as screening, which requires input and activity from various staff members at several stages during a patient's clinic encounter.

Introduction of a complex intervention into a general practice requires close assessment of the current operation of the clinic as well as careful planning to ensure that the intervention is achievable. Using the Normalisation Process Model, which offers principles for embedding a complex intervention in primary care, this paper will outline some of the many challenges faced in establishing Chlamydia screening in this setting. We will draw on qualitative data collected from 12 primary care clinics as part of a larger study of incentives in Chlamydia screening, to discuss such challenges, which include the diversity of general practice, the sexual health knowledge of clinic staff and the range of IT systems including availability of patient registers, computer alerts and recall systems.

40. GP INCENTIVE PAYMENTS FOR THE OPPORTUNISTIC SCREENING OF YOUNG WOMEN FOR CHLAMYDIA IN GENERAL PRACTICE – A RANDOMISED CONTROLLED TRIAL

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The objective of this study was to determine if offering a \$5 testing payment to general practitioners (GP) would increase chlamydia screening of young women, aged 16 to 24 years, in general practice. Barriers and enablers to opportunistic chlamydia screening in general practice were identified.

Twelve practices across metropolitan and regional Victoria were cluster randomised to receive either a \$5 payment per test (intervention) or no payment (control) when testing women aged 16 to 24 years for chlamydia. The trial was conducted for a 6 month period from June to December 2008.

Practices were involved in pre-trial audits to identify potential barriers and facilitators to screening and chlamydia education sessions were held with GPs. GPs were required to complete a pre and post trial survey about their knowledge, attitudes and practice of chlamydia screening.

A total of 45 GPs participated in the trial; 20 males and 25 females. The median age of GPs was 48 years (range 30–70) with a median number of years worked in general practice of 20 years (range 3–42). GPs worked a median of eight sessions per week (range 1–11). Overall, 82.2% of GPs had post-graduate qualifications and 91.1% were at least moderately interested in the management of sexually transmitted infections (STI).

During the 12 month pre trial period 5.9% (178/3040) of women in the control group were tested at least once for chlamydia, compared to 11.4% (305/2672) of women in the intervention group ($df=5.6\%$, $p=0.00$). In the same time period, 9.0% (16/178) of women in the control group tested positive for chlamydia compared to 9.2% (28/305) of women in the intervention group ($df=0.2\%$, $p=0.93$).

Further analysis will determine if there was a greater increase in testing rates in the intervention group compared to the control group and the barriers and facilitators to testing in general practice.

41. READY SET GO: BUILDING CAPACITY IN SCHOOLS TO DELIVER SEXUALITY EDUCATION – THE VALUE OF INTESECTORAL COLLABORATION WITH COMMUNITY ORGANISATIONS

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Primary schools have long been considered important sites for the development of sexual health literacies in young people, with sexuality education now an essential element of the core curriculum in many states. However, despite such curriculum requirements, research shows many schools are not teaching sexuality education and others are relying on outside organisations to deliver programs.

In response to community concerns and in an attempt to build the capacity of schools to meet curriculum requirements and deliver sexuality education, the Victorian Department of Education and Early Childhood Development, Family Planning Victoria and Deakin University formed a consortium to develop and implement a sexual health program within a cluster of primary schools in Victoria. Initially known as the 'Bass Coast Model', this program involved working with schools and local community health organisations. It was delivered across four regions in Victoria (a total of 35 primary schools) to great effect.

In 2009, an evaluation of the longitudinal impact of the model was undertaken. This presentation outlines the key features of the model, details the findings of the impact evaluation and discusses its potential as a model for developing sustainable comprehensive sexuality education programs in primary schools in collaboration with community health organisations.

42. ATTITUDES OF WA GPs TO CHLAMYDIA PARTNER NOTIFICATION: A SURVEY

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Genital Chlamydia is the most frequently notified sexually transmitted infection (STI) in Australia. In Western Australia, the majority of the cases are diagnosed by general practitioners (GPs) in the metropolitan area. There is concern that many cases remain undiagnosed because patients diagnosed with chlamydia do not tell their partners that they too should be tested and treated.

The aim of this study was to evaluate the attitudes of GPs to Partner Notification (PN) of chlamydia and to examine how they see their role and that of the Department of Health WA (DoH WA) in doing this. It also explored their use of resources for PN.

The study revealed that GPs understand the importance of PN but follow up is infrequent. The ambiguous role of the Health Department needs to be clarified so that GPs understand that it has limited capacity to undertake PN for chlamydia. The ambiguity of the current WA notification form needs to be resolved. GPs are willing to use printed and online resources to assist them with PN. The role of the practice nurse could be expanded to include assisting the GP with this aspect of care. This information is being used by DoH WA and the Australasian Society for HIV Medicine (ASHM) for developing an intervention to assist and improve PN in general practice.

43. THE CONTEMPORARY MANAGEMENT OF PREMATURE EJACULATION

C. McMahon

Australian Centre for Sexual Health, New South Wales, Australia.

Premature Ejaculation (PE) is a common sexual dysfunction. PE is associated with negative psychological consequences including distress, bother and frustration which may effect quality of life, partner relationships, self-esteem, self-confidence, and can act as an obstacle to single men forming new partner relationships. The evidence-based ISSM definition of lifelong PE should form the basis of the office diagnosis of lifelong PE. There is limited evidence suggesting that lifelong PE has a genetic basis and acquired PE is most often due to sexual performance anxiety, psychological or relationship problems and/or ED. Oral SSRI drugs and topical anaesthetics are effective and safe treatments for PE. Psychosexual CBT has a limited role as a first-line treatment for PE but has an important role as an adjunct to pharmacotherapy, especially in men with acquired PE due to sexual performance anxiety. Men with acquired PE secondary to co-morbid ED, hyperthyroidism, chronic lower urogenital infection, prostatodynia, or chronic pelvic pain syndrome (CPPS) should receive appropriate aetiology specific treatment alone or in combination with an SSRI.

44. TREATMENT OF PE: CONSIDERING AETIOLOGY AND PSYCHOLOGICAL IMPACT ON MEN AND THEIR PARTNERS

G. Whelan

Australian Centre for Sexual Health.

There has been a paradigm shift in our conceptualisation of PE over the last 10 years: moving from purely psychological theories to include neurobiological, genetic, physiological and sociological aetiologies. Recent definition of Life long PE by ISSM (International Society of Sexual Medicine) and classification of sub-types of PE by Waldinger reflect this (McMahon, 2008; Waldinger, 2008). Despite differing aetiologies, the impact of PE on heterosexual men and their partners is remarkably similar. Traditional behavioural treatments, such as Semens' Stop-Start technique and Masters and Johnson's Squeeze technique, do not take into account the various aetiologies & psychological impact of PE and are limited in their application. Treatment that addresses aetiology and psychological impact on the man and his partner may provide more effective outcomes.

45. DON'T BE FOOLED BY PAINFUL MEMORIES, IT IS THE TRAUMATIC MEMORIES THAT COUNT

K. Touma

Medical Psychotherapist and Sexual Health Physician, Private Practice.

One of the main consequences of sexual abuse/assaults are the long lasting effects of the traumatic memory. In this presentation Dr Touma will explore two effective approaches that help processing traumatic memories.

Analytical Psychotherapy or long-term 'talking therapy' has, until now, been conceptualized as being very different from and at times at odds with the Eye Movement Desensitization and Restructuring (EMDR) technique.

By drawing a clear differentiation between painful and traumatic memories, Dr Touma suggests analytical conversation and EMDR technique are in fact synergistic and complementary.

46. THE MANAGEMENT OF ERECTILE DYSFUCTION IN MEN UNRESPONSIVE TO PDE5 INHIBITOR DRUGS

C. McMahon

Australian Centre for Sexual Health, New South Wales, Australia.

Of men with ED, 30 to 35% will fail to respond to treatment with a phosphodiesterase-5 (PDE5) inhibitor. The most common cause of initial PDE5 inhibitor failure is inadequate patient education or a failure to optimise dosage. Severe penile vascular disease, unrecognised hypogonadism, uncorrected comorbid disease, vascular risk factors or psychosocial factors are also associated with initial PDE5 inhibitor failure. Initial PDE5 inhibitor failure is almost universal after a radical prostatectomy. Treatment with self-administered intracorporal injection therapy, a vacuum constriction device, combination therapy or a penile prosthesis is likely to help men who fail to respond to PDE5 inhibitor.

47. CHLAMYDIA TESTING AND PREVALENCE AT AUSTRALIAN SEXUAL HEALTH CLINICS; THE AUSTRALIAN COLLABORATION FOR CHLAMYDIA ENHANCED SENTINEL SURVEILLANCE (ACCESS) PROJECT

N. Franklin¹, R. Guy¹, A. Grulich¹, C. K. Fairley², M. Y. Chen², M. Hellard³, B. Dickson⁴, C. O'Connor⁵, L. Marshall⁶ and B. Donovan^{1,7} on behalf of the ACCESS Collaboration

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The Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS) is funded through the Australian Government Department of Health and Ageing Chlamydia Pilot Program.

Australia has a widely dispersed network of public sexual health services that test large numbers of people from priority populations for genital *Chlamydia trachomatis* infection. These populations include young sexually active heterosexuals, men who have sex with men, sex workers and Aboriginal and Torres Strait Island people. The ACCESS project was established to monitor chlamydia testing rates and prevalence at a national level which in turn will help interpret chlamydia diagnoses trends reported through passive surveillance. It is the first time chlamydia-related data that includes priority population and testing denominators has been collated at a national level.

Sexual Health Services were recruited from all states and territories. Using a standardised extraction program, retrospective de-identified line-listed demographic and chlamydia testing data on all patients were extracted from patient management systems. We estimated annual testing rates and prevalence among new patients (first visit to the clinic) attending 12 clinics who were able to provide retrospective data for five years, 2004 to 2008.

Over the five year period, 79 936 new patients attended the 12 clinics, and 48 063 (60%) patients received a chlamydia test. The testing rate increased over time from 55% in 2004 to 64% in 2008.

There were 2678 chlamydia diagnoses recorded, giving an overall chlamydia prevalence of 5.6%. The chlamydia prevalence appeared steady over the surveillance period; 5.8% in 2004 and 6.1% in 2008 (Fig. 1). Breakdowns according to priority populations, geographical residence and other demographic factors will be presented.

The ACCESS project successfully compiled chlamydia testing and outcome data on nearly 80 000 clients, both economically and without placing any extra burden on clinical sites. Until these data are fully analysed it is not possible to deduce how they may relate to trends in national notification rates reported through routine surveillance.

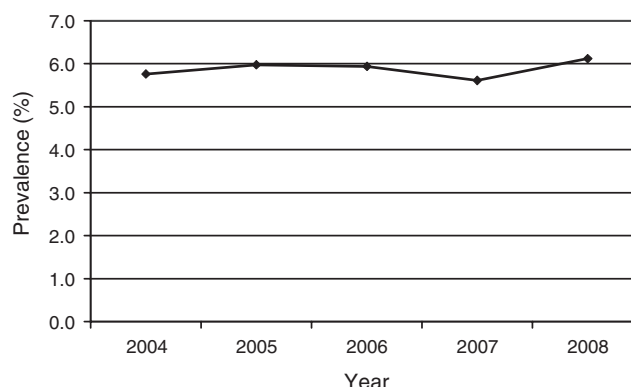


Fig. 1. Chlamydia prevalence in sexual health centre patients.

48. CHLAMYDIA TESTING RATES IN GENERAL PRACTICES ACROSS AUSTRALIA: THE AUSTRALIAN COLLABORATION FOR CHLAMYDIA ENHANCED SENTINEL SURVEILLANCE (ACCESS)

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Chlamydia is the most common bacterial STI in Australia. Notifications have increased by ~60% in the past 5 years from 36 222 in 2004 to 58 520 in 2008 with the majority among 15–29 year olds. As 90% of young females and 70% of males see a general practitioner (GP) annually, GPs are an important group to focus strategies to enhance testing. Funded by the Australian government in 2007, the 'Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS)' was established to provide the first national surveillance system to monitor chlamydia testing rates among GPs.

The ACCESS GP network derives data from three sources; Medicare, a sentinel network of 24 general practices and the Bettering the Evaluation and Care of Health (BEACH). We compare testing rates from the three data sources and describe findings based on total consultations and unique consultations.

Based on total consultations in 15–29 year olds, testing rates for Medicare, sentinel and BEACH ranged between 1.6–2.4% nationally, were higher in Western Australia (2.0–3.7%), Queensland (1.7–3.0%), and Victoria (2.0–3.1%) compared to other jurisdictions; higher among females (2.0–2.7%) than males (0.7–2.1%) and higher in metropolitan v. rural practices (1.6–2.8% v. 1.0–1.9%). Based on unique consultations in 15–29 year olds, testing rates for Medicare and sentinel data (BEACH not available) were 7.1–8.9% nationally, 8.4–12.1% among females, 4.8–5.2% among males and 7.6–10.9% in metropolitan v. 3.2–6.4% in rural practices.

Despite chlamydia testing being recommended for all sexually active young people, our results show that GP testing uptake is very low, particularly in males. Mathematical modelling suggests that 40% coverage in both males and females is needed to halve Chlamydia prevalence in four years, highlighting the need for GPs to be supported to enhance testing in this high risk group. The strengths and weaknesses of three sources will be discussed.

49. ACCEPT (AUSTRALIAN CHLAMYDIA CONTROL EFFECTIVENESS PILOT): DESIGN OF THE PILOT EVALUATION

J. S. Hocking¹, M. Temple-Smith², N. Low³, B. Donovan⁴, J. Gunn², M. Law⁴, J. Kaldor⁴, R. Guy⁴, S. Poznanski¹ and C. K. Fairley^{5,6} on behalf of the ACCEPt Consortium

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Chlamydia is a significant public health problem in Australia. While opportunistic chlamydia screening is conducted in several countries, there remains considerable debate about the effectiveness of organised population-based chlamydia screening programs for reducing chlamydia transmission and its associated morbidity. The ACCEPt consortium, funded by The Department of Health and Ageing, will design and evaluate a pilot program to assess the feasibility, acceptability, efficacy and cost-effectiveness of chlamydia testing in the general practice setting.

The pilot will be evaluated as a cluster randomised controlled trial targeting sexually active 16–25 year olds for annual chlamydia testing. Approximately 34 geographical areas (e.g. such as towns or suburbs) will be randomised and GP clinics within each area invited to participate. A multifaceted intervention will be used to maximise testing rates. The intervention will include: a computer alert prompting GPs to test; an incentive payment; a computer register and recall system, partner notification, and information and support with regular feedback on testing performance. Research staff will work with clinic staff to identify the optimal ‘chlamydia testing pathway’ for each clinic. Clinics in the control group will be encouraged to continue their usual chlamydia testing practice. The pilot will be conducted for 18 months in the first instance. The primary outcome will be a change in chlamydia prevalence after three years amongst patients of participating general practices. Secondary outcomes will include pelvic inflammatory disease and chlamydia testing rates.

The strength of this pilot is its randomised design, biological endpoints and multiple rounds of testing. Results will determine whether chlamydia testing is effective at reducing chlamydia transmission and morbidity and will be used to inform the optimal design of a chlamydia testing program in Australia. This paper will present in detail the pilot rationale and design.

50. ROUTINE CHLAMYDIA SCREENING SHOULD LEAD TO REDUCED REINFECTION RATES IN THE MEDIUM TO LONG TERM

D. G. Regan and D. P. Wilson

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In recent years chlamydia notifications have increased in many developed countries. It has been proposed that early treatment of chlamydia may reduce or prevent the acquisition of immunity and that treated individuals may consequently be more susceptible to reinfection than those who have recovered naturally. Control programs involving early treatment may therefore lead to increases in chlamydia incidence as a result of increased population susceptibility.

We developed a mathematical model of chlamydia transmission that accommodates multiple chlamydia reinfections to investigate the potential impact of treatment on incidence, prevalence, and transmission dynamics under various assumptions regarding acquired immunity and susceptibility to reinfection.

In the absence of routine screening, results from the model indicate that assumptions regarding the duration of naturally acquired immunity have little impact on prevalence. However, assumptions regarding the degree to which an individual’s susceptibility to reinfection is reduced following a prior infection have a significant impact on prevalence.

If routine screening and treatment is introduced at moderate to high coverage, we find that overall susceptibility, and susceptibility to an initial infection, increase gradually in the population over time, but the susceptibility to subsequent reinfections decreases in the medium to long-term (5–50 years, see Table 1).

Routine screening and treatment is thus likely to increase the overall population-level susceptibility to infection over time but susceptibility to multiple chlamydia reinfections is likely to decline. Our model suggests that screening should be beneficial in reducing the incidence of PID if, as some research suggests, this condition is linked with recurrent infection.

Table 1. Proportion of the population that is susceptible to chlamydia infection overall, and for each cycle of infection (median and interquartile range), assuming: 1) the duration of naturally acquired immunity is 1–2 months; and 2) there is no reduction in an individual’s susceptibility to reinfection following a prior infection

	Time since introduction of screening at 50% coverage per year				
	0 years	5 years	10 years	20 years	50 years
Overall	0.91 (0.83–0.97)	0.94 (0.87–0.98)	0.95 (0.89–0.99)	0.96 (0.92–0.99)	0.98 (0.97–0.99)
1st infection	0.49 (0.38–0.63)	0.54 (0.44–0.66)	0.60 (0.51–0.71)	0.70 (0.63–0.78)	0.87 (0.84–0.91)
2nd infection	0.23 (0.2–0.24)	0.22 (0.2–0.23)	0.19 (0.17–0.20)	0.14 (0.13–0.15)	0.062 (0.057–0.064)
3rd infection	0.12 (0.08–0.13)	0.11 (0.08–0.13)	0.10 (0.07–0.12)	0.075 (0.050–0.087)	0.032 (0.021–0.037)
4th infection	0.061 (0.030–0.083)	0.057 (0.028–0.079)	0.050 (0.024–0.070)	0.037 (0.018–0.052)	0.016 (0.007–0.022)

51. DEVELOPMENT OF A VACCINE AGAINST CHLAMYDIAL STD INFECTION AND DISEASE

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Chlamydia trachomatis is an obligate intracellular bacterial pathogen that infects the genital and ocular mucosa of humans, causing sexually transmitted disease and blinding trachoma. *C. trachomatis* infections of the genital tract are the most commonly reported bacterial disease, with an estimated 4–5 million new cases each year in the USA alone. The sequelae of *C. trachomatis* genital tract infections in women are chronic pain, pelvic inflammatory disease, infertility and ectopic pregnancy. No vaccines are currently available. The ideal vaccine should include one or more protective antigens combined with an adjuvant and a delivery route that stimulates T-cell immunity at mucosal sites and, importantly, should avoid any adverse immunopathological reactions. Our research group at QUT has identified several novel antigens and has shown them to induce neutralising antibodies *in vitro* as well as stimulate T-cell responses *in vivo*, leading to good reduction in infectious load following live genital tract challenge. We have also developed the mouse model to screen out adverse immunopathological responses and are currently evaluating the combination vaccine in a second animal model, hopefully on the way to future human trials.

52. PROMOTING CHLAMYDIA TESTING TO YOUNG WOMEN, THEIR PARTNERS AND THEIR GPs USING MODERN AND SOCIAL MEDIA

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The aim of the *Consider Chlamydia* Project was to translate into action the findings of a RCT where GPs asked to offer a chlamydia test with a Pap smear performed twice as many chlamydia tests and found the same rate of infection as doctors offering targeted screening.

A social marketing approach is used to educate young women and GPs about chlamydia and the importance of testing. Activities include creating interactive pages on the social networking site *Facebook*, establishing a *Facebook Beacon* site and conducting social events to facilitate viral marketing of the campaign's message.

The reach of these activities is measured using web metrics (number of people interacting with web materials) and the number of individuals photographed and 'tagged' in Social Action Advertisements (viral marketing). The campaign was implemented on 25/9/08 and will conclude on 30/6/09.

To date 2,309/45 800 (5%) Canberra-based *Facebook* users aged 18 to 40 years have interacted with campaign materials. 146 young people 'tagged' their photos to create Social Action Advertisements. Canberra *Facebook* users average 114 friends, creating the potential for 16 644 'trusted referrals' to campaign materials on *Facebook*. The Beacon site has attracted 5,789 unique visitors.

8250 postcards were distributed, 27 000 copies of student publications featured the campaign; 112 000 animated advertisements were shown in shopping centres and 10,000 branded condom packs given away. Presentations were made at the ACT Public Health Forum, an ASHNA seminar and other youth and health forums. Materials were distributed to 402 GPs and 116 Practice Nurses. Several media outlets reported on the campaign, including the Nine Network's *60 Minutes* program.

Social and modern media enabled the *Consider Chlamydia* campaign to reach a large number of young women. The effect of the campaign on screening rates will be determined by analysing the rates of chlamydia testing before, during and after the campaign.

53. MYCOPLASMA GENITALIUM IS ASSOCIATED WITH CERVICITIS IN A METROPOLITAN SYDNEY SEXUAL HEALTH CLINIC POPULATION

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Mycoplasma genitalium (MG) is a recognised causative agent of sexually transmissible infection (STI). Its role in male non-specific urethritis has been recently established, but the epidemiology of MG in women and its role in cervicitis is less well characterised. The development of molecular diagnostic testing has facilitated identification of a wider range of organisms potentially implicated in urogenital disease.

A prospective cross-sectional study investigating the prevalence and aetiology of cervicitis in two Sydney STI clinics enrolled 423 women from 2006–09. A multiplex polymerase chain reaction (mPCR) assay designated VDL06 was configured and validated for the detection of MG, *Ureaplasma parvum*, *Ureaplasma urealyticum* and *Mycoplasma hominis*. Cervical samples were analysed using VDLO6. Cervicitis was defined as >30 polymorphonucleocytes per high powered field (30 PMNL/hpf) on >3 fields in a gram stain of cervical mucus.

Cervicitis prevalence in this cohort was 39%. MG was detected in 14/423 women, a prevalence of 3.31% (95% CI 1.82%, 5.49%). The unadjusted prevalence ratio of cervicitis in women with MG was 2.09 (95% CI: 1.55, 2.82, $P=0.002$). The frequency of MG in the women with cervicitis was 11/165 (6.7%). The clinical and demographic data for the women with MG will be presented. Data will also be presented on the prevalence and cervicitis association of the other Mollicutes studied in this cohort.

This is the first Australian study to demonstrate a significant association of MG with cervicitis and to determine prevalence of MG in urban Australian women. The application of a mPCR increased our ability to investigate a range of organisms potentially associated with cervicitis. The capacity to detect MG in women with cervicitis will facilitate better targeted therapy for this common condition. Molecular testing for MG should be available routinely for clinical services to improve STI management, particularly for cervicitis and urethritis.

54. *TRICHOMONAS VAGINALIS*: UNDER-DIAGNOSIS IN URBAN AUSTRALIA COULD FACILITATE RE-EMERGENCE

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Trichomonas vaginalis (TV) has a low profile in urban sexually transmitted disease (STD) clinics in Australia and in many developed countries. TV prevalence in urban Australia is reportedly low based largely upon routine wet preparation direct microscopy in highly screened CSW populations.

A prospective study in a metropolitan Sydney STD clinic, TV was detected by a polymerase chain reaction (PCR) assay in 16/356 women (4.5%, 95% confidence interval (CI) 2.6%–7.2%), whereas discretionary wet preparation microscopy in women with clinically suspicious vaginal discharge found only 4 cases (1.1%, 95% CI 0.3–2.8%). This PCR result exceeds recently reported urban Australian rates of <1%. The clinical and demographic features of the TV positive women will be presented.

Significantly in this cohort, a high proportion of women with TV were not from a recognised geographic risk group but their consorts were. Local acquisition of TV was common. Urban society in Australia, as in other developed countries, is very culturally diverse. Accordingly, sexual networks particularly of migrant and first generation Australians may include contacts from populations with higher TV prevalence.

This data suggests that the current low profile of TV in urban Australian STD clinics and the variable application of insensitive tests for case detection may be leading to under-diagnosis of TV. This could facilitate a re-emergence of TV in diverse urban populations. An increase in trichomoniasis-associated adverse reproductive outcomes and enhanced HIV transmission could pose a salient public health threat. Accordingly we propose that standardised molecular detection tests for trichomoniasis be part of routine testing in urban Australian STD settings.

55. THREE YEARS ON, A REVIEW OF MEDICAL TERMINATIONS OF PREGNANCY PERFORMED IN A SEXUAL HEALTH SERVICE

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Access to abortion services is often limited in parts of regional Australia, including north Queensland. Since April 2006 the Cairns Sexual Health Service (CSHS) has provided medical termination of pregnancy services for women up to nine weeks gestation, using a regimen of methotrexate and misoprostol.

Between April 2006 and March 2009, 140 medical terminations in 130 women were performed at the CSHS. The majority of women were aged between 20 and 29 years (47%), in a current relationship (72%), nulliparous (49%) and had not had a previous termination (57%). Successful medical termination of pregnancy was achieved in 94% of women at less than seven weeks gestation and in 81% of women with gestation between seven to nine weeks.

Provision of medical termination through sexual health services is one strategy to address access inequity in regional areas. Demand for this service in Cairns continues to rise.

56. A RETROSPECTIVE CASE NOTE REVIEW OF SEX WORKER ATTENDEES AT SEXUAL HEALTH CLINICS IN THE WESTERN SUBURBS OF SYDNEY

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Female sex workers (SWs) are recognised to be at high risk for the acquisition and transmission of sexually transmitted infections (STIs) in many parts of the world. There is a paucity of published data concerning SWs from the Western suburbs of Sydney, with the last published study conducted in 1988. Therefore, we conducted a study to determine the demographics, sexual practices and health care needs of SWs attending Sexual Health Clinics (SHCs) in the region.

Self-identified SWs who presented to SHCs in Western Sydney between April 2007 and March 2008 were identified using clinic databases. A case note review was then undertaken.

185 female SWs were included in the analysis. 98 (54.5%) were born overseas (predominantly China) and 82 (45.6%) were born in Australia. 117 (68%) were from an English speaking background (ESB), while 55 (32%) were from non-English speaking backgrounds (NESB). Seventy-two (38.9%) were symptomatic on attendance, with vaginal discharge the most common symptom. Chlamydia was the most commonly reported STI in the previous 12 months, with 28 cases (15.1%). SWs from NESB were significantly more likely to be older, symptomatic, have a Hepatitis B diagnosis in the previous year and work more shifts per week, compared to SWs from ESB. SWs born overseas were more likely to be symptomatic than Australian born SWs, who in turn, were more likely to have a Hepatitis C diagnosis in the previous year.

Our data demonstrate significant differences between SWs from NESB and ESB. SWs from NESB would potentially benefit from evidence-based, culturally and linguistically appropriate interventions and targeted health promotion.

57. SEX AND THE SINGLE WOMAN: A SURVEY OF WOMEN USING AN INTERNET DATING SERVICE

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A change in the pattern of long-term partnering in Australia is leading to increasing numbers of women re-entering the dating market and online dating sites are an increasing source of potential partners. Given that notification rates for sexually transmissible infections (STIs) are rising in older as well as younger women, this internet-based study was set-up to examine the knowledge, practices and attitudes to STIs of women aged 40 years and above with a younger group of women.

In January 2009 the online dating service, RSVP, posted a personalised e-mail to all female members who had logged-on within the previous 6 months inviting them to complete the Family Planning NSW survey. 1800 responses were received within 2-months: 62% were aged 40 years and above. Overall, 42% had tertiary education and 60% were employed fulltime. The majority (63%) were seeking a long-term partner. A quarter of women in the 40 plus years group had met two or more new sexual partners in the last year compared with 43% of younger women but the proportion of women meeting two or more sexual partners on the internet was the same in each group (18% v. 22%). Older and younger women reported similar levels of comfort buying condoms. Older women were more likely to discuss STIs with a new partner before sex but younger women were more likely to state that they would not have sex with a new partner without a condom. Younger women were significantly more likely than older women to report an STI in the past year (4.7% v. 2.1%).

Women using online dating sites to meet new sexual partners are potentially at risk of STIs and it is essential that appropriate information is available to help women of all ages safely negotiate new sexual relationships.

58. RECURRENT VULVOVAGINAL CANDIDIASIS: SHOULD PATIENTS JUST GIVE UP NOW?

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Recurrent vulvovaginal candidiasis is a difficult condition to manage, and many patients seek alternative therapies to gain relief from symptoms. Mainstream management of this condition involves suppression and maintenance therapy, using oral or intravaginal antifungals, usually for up to six months. Following cessation of this therapy, up to 50% of patients suffer relapses.

The evidence base for alternative therapies is poor, yet many patients turn to these methods if dissatisfied with conventional therapy. *Allium sativum*, commonly known as garlic, has been shown to be effective as an antifungal against *Candida* species, using in-vitro studies. To date, no human studies have assessed the efficacy of oral garlic tablets in vulvovaginal candidiasis. Anecdotally patients have found oral garlic to be helpful, but before it can be confidently recommended quality studies need to provide a basis for management.

The author will discuss her findings regarding the potential for *Allium sativum* in vulvovaginal candidiasis. The PhD currently being undertaken by the author seeks to clarify whether the active component of garlic, allicin, or its transformation products, would be secreted into vaginal tissue in sufficient quantity to have antifungal effect. Following this study, microbiological studies to ascertain whether commercially available garlic products contain ingredients which have an effect against the most common species of *Candida* will be performed. Finally, a small human pilot study will be performed which, should the results be promising, will form the basis for a randomised controlled trial.

59. SEXUALLY TRANSMITTED INFECTIONS AMONG FEMALE SEX WORKERS IN MANADO, INDONESIA USING A MULTIPLEX PCR

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Multiplex PCR is a technology able to detect STIs using self-collected specimens and one laboratory platform. We determined the prevalence of STIs among female sex workers in Manado, Indonesia.

Women were recruited at their workplace. Participants completed a questionnaire and provided a urine sample and self-collected vaginal swab. These were tested for STIs using multiplex PCR in Sydney, Australia.

221 participants were recruited from entertainment venues, streets, parks and brothels. Mean age was 26.4 years. During the previous 3 months, 30% reported never using condoms, while only 2.7% always used condoms. Prevalence ($n=217$) was: gonorrhoea 11%, chlamydia 27%, *Mycoplasma genitalium* 12%, trichomoniasis 23%. Independent risk factors for gonorrhoea were domiciled outside North Sulawesi ($P=0.001$) and age ≤ 25 ($P=0.03$); for chlamydia were no prior history of STIs ($P=0.003$) and age ≤ 25 ($P=0.02$); for *Mycoplasma genitalium* were number of clients on last day of sex work ($P=0.006$) and younger age ($P=0.03$); for trichomoniasis was number of clients per week ($P=0.03$). For a combined 'curable STI' defined as any of the above four infections, independent risk factors were number of clients on last working day ($P=0.002$), age ≤ 25 ($P=0.02$), sex working <2 years ($P=0.04$), and having a non-paying regular partner ($P=0.04$).

The multiplex PCR platform detected a range of STIs using a simple urine sample. This is the first report of infection with *M. genitalium* in Indonesia. The high prevalence of STIs in these FSWs signals their vulnerability to HIV infection. Enhanced and novel intervention approaches need to be implemented, including outreach screening of STIs, and periodic presumptive treatment. The results of this study can guide targeting of FSWs most likely to have STIs, especially those aged ≤ 25 years.

60. A SYSTEMATIC REVIEW OF STUDIES ASSESSING RISKS OF HIV AMONG FEMALE SEX WORKERS IN PAPUA NEW GUINEA SINCE 1980

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Sex work plays an important role in the heterosexual transmission of human immunodeficiency virus (HIV). Female sex workers (FSWs) in Papua New Guinea (PNG) are therefore considered a high-risk group for acquiring and transmitting HIV including sexually transmitted infections (STIs). Our aim was to review published and unpublished studies of the risks for sexually acquired HIV among FSWs in PNG.

We searched 'ALL DATABASES' through the MEDLINE electronic database in March 2009 for studies published in between 1980–2008 using the keywords: sex workers and PNG. We also searched for unpublished studies from International Aid Agencies that operate in Port Moresby with FSWs.

Seven studies met the inclusion criteria – 5 were published and 2 were not. Risks for acquiring HIV among FSWs included inconsistent condom use with clients (range: 0–63%) and regular sexual partners (range: 0–34%) and high rates of STIs. The four most common STIs included; *Trachomonas* (range: 21–56%), *Neisseria gonorrhoea* (range: 20–39.4%), *Syphilis* (range: 16–33.7%) and *Chlamydia* (range: 14–32.8%). The rates of HIV ranged from 3–21%.

The measurements of condom use varied across different studies. Some improvement in the rate of condom use has occurred overtime however, their use remains suboptimal. In contrast, the rate of STIs remains high and did not appear to change overtime with most STIs present in 20% or more FSWs. Disturbingly, the proportion with HIV was higher in the more recent studies and present 21% in 2004. The suboptimal condom use, high rates of STIs and suggestion of rising HIV prevalence in FSWs are a great concern and demand urgent actions.

61. KNOWLEDGE, ATTITUDE, PRACTICES AND BEHAVIOUR OF FEMALE SEX WORKERS IN PORT MORESBY

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Female sex workers (FSWs) are considered a high risk group for human immunodeficiency virus. We therefore aimed to study the characteristics that render FSW vulnerable to HIV and track risky behaviours through a knowledge, attitude, behaviour and practice (KAPB) survey.

We recruited FSWs through a convenience sampling and collected behavioural data using a structured questionnaire between June and July 2003. The data was double entered into FoxPro 2.6 database, converted and analysed using Stata 7.0 (Stata Corporation).

We surveyed 79 FSW. The average FSW was 25 years old (range: 14–47), have 5 years of formal education (range: 0–11) and had first non paying sex at 16 years old (range: 12–23) and first paying sex at 19 years old (range: 13–32). They had an average of 3 (range: 0–7) sexual partners per day of which 2 (range: 0–4) were clients and 1 (range: 0–2) was a regular sexual partner. Condom use was (32%; 95% CI: 22–43) with clients and (15%; 95% CI: 6–29) regular sexual partners. For 50 (63%; 95% CI: 52–74) sex work was their only source of income. Seventy nine (100%; 95% CI: 95–100) have heard of the male condom but only 53 (67%; 95% CI: 56–77) thought it prevents HIV. Seventy eight (99; 95% CI: 93–100) thought one could catch HIV through sex but 38 (48%; 95% CI: 37–60) thought one could catch it from mosquito bite whilst 12 (15; 95% CI: 8–25) thought they have no chance of catching it. Twenty eight (36%; 95% CI: 25–47) have had the HIV test. Other risky behaviours included alcohol 43 (54%; 95% CI: 43–46) and marijuana 35 (44%; 95% CI: 33–56) use.

The findings identify areas for improved actions targeting FSWs based on the characteristics identified in this survey.

62. SEXUAL BEHAVIOUR AMONG THE ADULT MALE WORKERS IN PAPUA NEW GUINEA

J. Millan

National Department of Health, Papua New Guinea.

Papua New Guinea (PNG) is experiencing a steady increase of HIV infection. Certain locations in the country were identified and prioritized where high risk groups exist. In 2006, a behavioural surveillance survey (BSS) was conducted aimed at establishing a monitoring system to track trends in sexual behaviour and to help guide program planning.

A total of 1358 adult male workers were randomly selected and interviewed including 246 truck drivers, 353 Ramu Sugar workers, 421 Lae port workers and 388 military personnel.

The adult male workers reported a range of high risk sexual behaviours. The proportion of men *paying women for sex* in the last 12 months varied greatly: truck drivers (70%), military personnel (61%), port workers (33%) and Ramu Sugar workers (7%). *Condom use* was high for the most recent commercial sex act (62–91%), although consistent condom use was not as high. Truck drivers were more likely to have *non-commercial casual sex partners* than the other workers. *Condom use* was less common with casual partners than with women who sell sex. The proportion of men having had *anal sex* during the previous 12 months ranged from 1% to 59%. There was wide variation in reported *sex with another man and polygamous marriage* was common among truck drivers (26%). The proportion of men who *hit their wives* ranged from 42% to 69% and the percentage of men who reported having *coerced a woman to have sex* ranged from 18% to 49%. Between 58% and 90% of the workers reported *frequent consumption of alcohol*. *Knowledge of HIV prevention* was generally high however *incorrect beliefs about HIV transmission* are still common.

Military personnel generally had the *most positive attitudes*.

The study showed that high risk sexual behaviour in the Adult Male workers was prevalent and also showed that comprehensive knowledge on prevention was low.

63. AN EVALUATION OF THE SEXUAL HEALTH NEEDS OF PEOPLE OF INDIAN ORIGIN

S. Sawleshwarkar, S. K. Kakar, S. Eswarupa, C. Chung, R. Jones, K. Lagios, A. Mindel and R. J. Hillman

Although data are limited, evidence suggests that rates of HIV and STIs are growing in India. Data from the Australian Department of Immigration and Citizenship show that People of Indian Origin (PIO), with 22 688 people (11%), were the 3rd most common source of new migrants into Australia in 2007–08. The 2006 Census data show that 4.8% of the population in Parramatta was made up of PIO compared to 0.7% in Australia. Their sexual health needs are unknown, despite data from the UK suggesting considerable differences from the local born community. We sought to identify the sexual health needs of PIO attending Parramatta Sexual Health Clinic (PSHC) and compare them to the Australian born community (ABC).

A retrospective case note review of attendees of PSHC during the period 1st January 2007 and 1st January 2009 was performed. PIO were identified from the demography field of the clinic database. For each PIO, two gender-matched people from the ABC who had attended during the same week were identified. The case notes were then reviewed. Data variables collected included demography, reasons for attendance, main service provided, current and past STIs. Data were analysed using SPSS Version 15 for Windows.

A total of 174 PIO were identified. Of these, 75.3% were male. The commonest reason for attendance was screening (30.5% of PIO), followed by anogenital symptoms (27%) and sexual problems (12.1%). Males were more likely to attend for screening compared to females. The most common service provided to PIOs was STI screening (52.3%). Twelve percent of PIOs attended for HIV management. Data comparing PIOs and ABCs will be presented.

Whilst PSHC attendees are a highly selected population, these data should provide a basis for a more evidence-based approach to service design. Community-based studies are also required to characterise the sexual healthcare needs of PIO.

64. UNDER THE COVERS

C. O'Mahony

Countess of Chester Foundation Trust Hospital.

Part 1 Vaginal discharge, lumps and bumps made easy

Part 2 Why men need to be understood and not improved

Sexual health is all about individuals in difficult physical and emotional circumstances. I've seen it all and have pictures of most of it. All clinical stories give fascinating insights into case management. Female physical problems are dealt with in the first part and the second part touches on the age old question – just what planet are men from? As far as women are concerned it is not planet earth. The website (www.chestersexualhealth.co.uk) has many useful pictures.

65. LEARNING & TEACHING SEXUAL HEALTH IN 2009: A UK PERSPECTIVE

C. Estcourt

Barts & The London School of Medicine & Dentistry, London, United Kingdom.

The context in which we provide sexual health services in the UK is changing how we teach and learn. The increasing engagement of primary care with sexual health has opened up many opportunities for teaching & training at post graduate level. However, clinicians and their services may not be appropriately prepared to meet learners' needs, particularly in a competency-based learning program. This session will show how several UK initiatives, relevant to the Australian context, are responding to those educational needs from both learner & trainer perspectives.

66. AN EVALUATION OF SEXUAL HEALTH MEDICINE TEACHING AT MEDICAL SCHOOLS IN AUSTRALIA AND NEW ZEALAND

S. R. Kakar¹, S. Sawleshwarkar¹, D. B. Russe² and R. J. Hillman¹

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Most sexual health conditions are managed outside specialised Sexual Health Medicine (SHM) services. It is therefore important that all medical students be trained adequately in SHM. Currently little is known about what and how much of the speciality is being taught to medical students in medical schools in Australia and New Zealand (NZ). We therefore sought to evaluate SHM curricula in these medical schools from both quantitative and qualitative aspects.

It was assumed that SHM specialists were the individuals most likely to do specialist teaching and that the Dean nominated key staff of each school would be best placed to have a view on the role of SHM in the overall medical school curricula. Thus we conducted a questionnaire-based survey of specialists and the key staff in each medical school in Australia and NZ.

Our questionnaire was based on the British Association of Sexual Health and HIV Medicine (BASHH) guidelines for undergraduate SHM curriculum (2005). The questionnaire was designed to assess the time spent on teaching various aspects of SHM including sexual history taking, examination, diagnosis and management of STIs, and ethical and legal aspects of the subject.

Four (16.7%) of the 24 medical schools completed the questionnaire. Total time allocated to SHM in these medical schools varied from 815 to 2340 min, with a median of 1868 min. At least 70% of the key SHM topics were covered in all curricula.

Forty specialists (21.5%) associated with the Australasian Chapter of Sexual Health Medicine completed the questionnaire. Detailed analysis of time spent on the various topics of SHM will be presented.

SHM teaching varied markedly in terms of subject matter, allocated time and teaching modalities. National guidelines for the teaching of SHM to medical students could facilitate the development of more consistent standards within the medical workforce.

67. DEVELOPING AND IMPLEMENTING A SEXUAL HEALTH OPTION FOR MEDICAL STUDENTS

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²FPWA Sexual Health Services, Perth, Western Australia, Australia.

Sexual health skills and knowledge are essential for medical graduates.

In a collaboration between the School of Women's and Infants' Health at the University of Western Australia (UWA) and a community organisation, FPWA Sexual Health Services, an option unit in sexual health was developed for third year medical students.

The learning program aimed to enable students to further develop their confidence and competence in working in the field of sexual health. The unit was designed to encourage students particularly interested in sexual health, as well as those who identified a need to acquire knowledge and skills in this area.

In this presentation, the outcome-based learning objectives, student-centred teaching methods and positive student evaluation of the programme are outlined. Included in the discussion are the challenges and the triumphs of implementing this teaching and learning experience.

68. RESPONDING TO THE SEXUAL AND REPRODUCTIVE HEALTH EDUCATION NEEDS OF GENERAL PRACTITIONERS IN QUEENSLAND

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In 2008 a survey on Sexual and Reproductive Health (SRH) knowledge and education needs of General Practitioners in Queensland was conducted by the HIV & HCV Education Projects, School of Medicine, The University of Queensland and Family Planning Queensland. The survey was sent to 7755 General Practitioners who are registered through the Medical Board of Queensland. 1061 surveys were returned (13.7%).

This presentation offers detailed analysis and interpretation of the results of the knowledge questions. 743 surveys returned by GPs who are currently practising in QLD are used in this analysis. This will include discussion of the differences and knowledge of SRH amongst rural, remote and metropolitan practising GPs and gender and age differences.

These results have also been used to update the current education offered by the School of Medicine and Family Planning QLD. Evidence gathered from the pre and post course surveys of the Education Course in Sexual Health for GPs, illustrates this has been successful. This self administered survey is sent 2 weeks before the course and two weeks after the course as per the RACGP QA&CPD. The survey, enclosed with pre course reading, asked General Practitioners to rate their perceived level of knowledge and skill in 42 areas utilising beginning statements: 'I have sufficient knowledge in...?' and 'I have sufficient skill in...?'. Responses were recorded on a Likert Scale – least to most. The methodology and outcome of this assessment will be analysed.

Three courses have been offered in the last 12 months (March 2008–March 2009) and 104 GPs have completed this training. 89 of these GPs have completed both the pre and post course surveys. All GPs self assessed their knowledge and skills have been improved by attending the course. Both the baseline level of knowledge and the increase after education will be discussed.

69. DERM DOWN UNDER – EDUCATING DOCTORS ABOUT GENITAL DERMATOLOGY AND GENITAL PAIN USING AN ONLINE PROGRAM

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The authors were aware of a gap in GP education regarding the management of genital dermatology and pain. They sourced an unconditional grant from a pharmaceutical company to develop a learning activity on this topic.

The Active Learning Modules (ALM) activities are based on a case study, which takes the participant through the diagnostic pathway with opportunities to learn more about aspects of genital dermatology and pain as click down menus throughout the modules. As the diagnosis of dermatological conditions relies on history and visual appearance, several photographic images were also sourced and referenced. A graphic artist developed an illustrated demonstration of vulval pain. Participants complete an evaluation of the program and are allocated Continuous Professional Development (CPD) points for both the module and the evaluation. Genesis Ed was chosen to translate the program to the web-based format as they are GPs with extensive teaching experience. Their Website has 9700 Australian GPs registered.

The ALM was launched in November 2008. By February 2009, 140 health professionals had completed the modules. This presentation will provide an overview of the learning tools used and the results of the evaluations to August 2009.

The online learning format provides participants in a wide range of locations with access to a diverse program of activities. In Australia, many health professionals are located a long way from the major teaching hospitals and centres of excellence. Online learning provides the opportunity to keep up to date without having to travel. Programs such as this also have potential for a wider international audience as they require only access to the internet and familiarity with the English language.

70. CLINICAL PHOTOGRAPHY IN THE SEXUAL HEALTH/HIV CLINIC: TIPS AND TECHNIQUES FOR CLINICIANS

C. J. Carmody

Liverpool & Campbelltown Sexual Health, NSW, Australia; Greater Southern Sexual Health Services, NSW, Australia.

Clinicians in sexual health clinics see interesting and diverse presentations of STIs and genital dermatoses. This presentation will focus on useful tips and techniques to aid the busy clinician to capture images of good quality for teaching and publication purposes. In particular there will be an emphasis on macro photography in the Sexual health clinic. There will be reference to equipment settings, lighting and clinical policy.

71. THE IMPACT OF HIV RISK REDUCTION BEHAVIOURS ON SEXUALLY TRANSMISSIBLE INFECTIONS IN HIV NEGATIVE HOMOSEXUAL MEN

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HIV risk reduction behaviours, including serosorting (SS) and strategic positioning (SP), are common in gay men and might be effective in lowering the risk of HIV transmission. However, the impact of these behaviours on sexually transmissible infections (STIs) has not been assessed.

Between 2001 and 2004, 1427 initially HIV negative men were enrolled in the Health in Men cohort and interviewed six-monthly through to June 2007. SS (reporting unprotected anal intercourse (UAI) with HIV-negative partners only) and SP (reporting insertive UAI only) were defined behaviourally. Participants were tested annually for anal and urethral gonorrhoea and chlamydia, herpes simplex virus types 1 and 2, and syphilis. In addition, they reported annual diagnoses of these conditions, and of genital and anal warts.

Compared with men who reported UAI with HIV non-concordant partners, men who practised SS had significantly lower risk of incident syphilis (Hazard Ratio (HR) = 0.19, 95% CI: 0.05–0.68), urethral gonorrhoea (HR = 0.41, 95% CI: 0.27–0.63) and chlamydia (HR = 0.55, 95% CI: 0.42–0.73), and anal gonorrhoea (HR = 0.53, 95% CI: 0.35–0.82) and chlamydia (HR = 0.51, 95% CI: 0.36–0.71). Compared with men who reported no UAI, SS was associated with an increased risk of urethral chlamydia (HR = 1.76, 95% CI: 1.28–2.42). In men who practised SP, the incidence of anal gonorrhoea (HR = 0.39, 95% CI: 0.20–0.75) and anal chlamydia (HR = 0.49, 95% CI: 0.31–0.78) was significantly lower when compared with men who reported receptive UAI. In contrast, SP was associated with an increased risk of urethral gonorrhoea (HR = 1.95, 95% CI: 1.19–3.21) and urethral chlamydia (HR = 2.46, 95% CI: 1.72–3.53) compared with men who reported no UAI.

SS and SP were associated with lower risk on a range of STIs compared with men who practised other means of UAI. However, SP appears to increase the risk of urethral STIs compared with men who have no UAI.

72. VIEWS OF AUSTRALIAN MEN WHO HAVE SEX WITH MEN ON RAPID TESTING FOR SYPHILIS AND HIV

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Increased frequency of screening for syphilis and HIV could improve control of these infections among men who have sex with men (MSM). Rapid testing has the potential to increase the uptake of syphilis and HIV testing among MSM in clinic and home settings.

We undertook rapid finger-prick testing of MSM for syphilis using the Determine[®] Syphilis TP immunoassay at two gay community events in Melbourne in 2009. After syphilis testing and provision of information about rapid oral HIV testing, men were asked to complete a questionnaire on their views about rapid syphilis and HIV testing.

176 men were tested and completed a questionnaire. The median number of male sex partners reported for the prior 12 months was 4 (range: 1–200). The proportion who reported never being tested for HIV or syphilis before was 19% and 33% respectively. If rapid testing for syphilis and HIV were available in a clinic setting, 79% and 64% of men indicated they would prefer these respective tests over conventional serology. Furthermore, 70% and 74% indicated they would test more frequently for syphilis and HIV respectively if rapid testing was available in a clinic.

If rapid testing for syphilis and HIV were available in a home setting, 54% and 62% of men indicated they would be likely to test themselves using these respective tests at home. Furthermore, 49% and 61% indicated they would test more frequently for syphilis and HIV respectively if rapid testing was available for home use.

Most MSM expressed a preference for rapid finger-prick testing for syphilis and rapid oral HIV testing over conventional tests. Use of rapid testing for syphilis and HIV in clinical and non-clinical settings has the potential to increase the frequency of testing among MSM, enhancing control of these infections in Australia.

73. SYPHILIS & HIV NETWORKS IN RURAL NORTH WEST TASMANIA

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This visual presentation examines rural issues relating to a cluster of new syphilis and HIV transmission in north-west Tasmania. During 2006–2008, there were 12 new cases of syphilis and possible new cases of HIV transmission related to this network.

The significance of this cluster lies in its rural setting, the localised hidden networks between HIV and syphilis transmission, the limited uptake of safer sex messages, contact tracing, managing the legal 'public health' requirements to protect others, and the way men who have sex with men (MSM) networks use local beats.

The presentation identifies the unique strategies and collaboration between Sexual Health Service, Tasmanian Council on AIDS, Hepatitis & Related Diseases (TasCAHRD), local Municipal Authorities, NW Division of General Practice and local representatives. TasCAHRD has taken the lead to focus this major rural project on beat activities, mainstream marketing and social networking websites used by north-west coast MSM.

74. SYPHILIS TESTING, DIAGNOSES AND REINFECTION IN MSM IN VICTORIA

J. L. Goller¹, R. Guy², C. El Hayek¹, J. Gold¹, M. Gouillou¹, I. Bergeri¹, D. Leslie³, B. K. Tee⁴, L. Owen⁴, N. Roth⁵, C. K. Fairley⁶, N. Higgins⁷ and M. E. Hellard¹

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⁷Victorian Department of Human Services, Melbourne, Victoria, Australia.

In Victoria from 2003–07, the number of infectious syphilis notifications among MSM increased 10-fold; about half these cases were in HIV positive MSM. We assessed recent trends in infectious syphilis diagnoses rates, reinfection rates and syphilis testing in HIV positive and HIV negative MSM tested in primary care clinics in Victoria.

We analysed data from April 2006 to June 2008 from the Victorian Primary Care Network for Sentinel Surveillance on BBVs and STIs which collates laboratory testing data from all MSM tested for HIV/STIs at four clinical sites with a high MSM caseload. HIV positive status was based on a positive HIV test or HIV viral load test before the syphilis test. HIV negative status was based on a negative HIV test after the syphilis test. Reinfection was defined as a significant increase in non-treponemal titre in a previously infected individual. Linear regression was used to examine syphilis testing trends.

In 27 months, 10 634 syphilis tests were conducted in 6775 HIV negative MSM, the number of syphilis tests increased over time (average of 5.0 more tests per month, $P < 0.001$); infectious syphilis was diagnosed in 171 (1.6%) tests and 4.1% of diagnoses were reinfections. There were 6287 tests conducted in 1401 HIV positive MSM, the number of tests increased over time (average of 5.8 more tests per month, $P < 0.001$), infectious syphilis was diagnosed in 133 (2.1%) tests and 20.3% of diagnoses were reinfections. HIV positive MSM were five times more likely to be reinfected with infectious syphilis than HIV negative MSM (RR = 5.0, 95% CI: 2.2–11.0).

This analysis shows that at four clinics with the largest MSM client base in Victoria, syphilis testing is increasing steadily. However high reinfection rates, particularly in HIV positive MSM, suggest that further prevention strategies are needed to reduce ongoing syphilis transmission in MSM.

75. THREE IN THE BED AND SOMEONE SAID . . . T.O.M. BOYS! A HEALTH PROMOTION PROGRAM ADDRESSING THE NEEDS OF GAY MEN WHO HAVE GROUP SEX

B. Tart and Y. Calmette

ACON Sydney, New South Wales, Australia.

This presentation will outline an innovative, multi-strategic program from ACON in response to the identified issue of risk of HIV transmission for gay men into group sex. HIV notification, epidemiological data and other research has suggested that group sex (with three or more men) can be a risk factor for HIV transmission.

Working with gay men who have group sex to provide HIV education and safe sex materials can be challenging as sex groups often form spontaneously and disband within a few hours. Further, formal sex networks and private sex parties can also be difficult to reach with information and safe sex supplies due to their underground and secretive nature.

ACON's Three Or More (T.O.M) campaign was established in 2006 with the aim of engaging gay men in Sydney who participate in private group sex parties and who 'hook up' for group sex after major dance parties.

The campaign was first trialed over the 2006 Sleaze Party weekend, and has been successfully expanded to include other major events, selected licenced venues and as a resource available for order online.

This presentation will describe the rational, response, process and outcomes of the project including ways that key community members and partnerships were incorporated within the project framework. Its purpose will be to skill-share with other sexual health educators about the process of engaging with this particular sub-population, and to facilitate discussion about further ways in which educators can deliver HIV prevention programs for gay men who have group sex.

76. THE EVIDENCE FOR PRIMARY HEALTH STI SCREENING PROGRAMS IN REMOTE ABORIGINAL COMMUNITIES

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The prevalence of sexually transmissible infections (STIs) in remote Aboriginal communities is about 10-fold greater than non-Indigenous populations. Screening has been identified as a key prevention strategy to reduce the transmission of STIs.

We reviewed the literature to identify the impact of primary health clinic screening programs on the transmission of bacterial STIs in remote Aboriginal communities evidenced by changes in STI disease outcomes.

Published evaluations of three programs were identified. In the Anangu Pitjantjatjara Lands of South Australia, community and opportunistic STI screening coordinated by Nganampa Health Council achieved coverage rates of 61–78% among 14–40 year olds from 1996 to 2008 with a significant reduction in STI prevalence in this period; rates falling rapidly in the first few years and remaining below 8% (gonorrhoea) and 6% (chlamydia) for the most other years. In the Tiwi Islands opportunistic, community and school-based screening programs achieved coverage rates of 82–84% among 15–30 year olds from 2002 to 2005. Among 15–35 year olds there was a reduction in gonorrhoea prevalence from 8.7% to 4.3% and chlamydia prevalence from 4.7% to 0.3%. There was also a significant reduction in STI notification rates but no reduction in Katherine and Darwin Remote. In Central Australia community-based screening achieved coverage of 44–52% from 2004 to 2006 and among 15–30 year olds gonorrhoea prevalence decreased from 13.3% to 10.4% but chlamydia prevalence increased from 10.2% to 14.0%. All three screening programs were components of broader STI prevention strategies, the characteristics of such will be compared.

There is some evidence of success of STI screening programs in reducing STI prevalence in Aboriginal communities; with variation according to different levels of service activity. Interpretation is compromised by potential confounding related to factors such as mobility, sexual behaviour and treatment-seeking behaviours which may change over time and vary across communities. A community-based randomised controlled trial to enhance STI diagnosis and management service activity currently in development in Central and Northern Australia, may provide a more definitive answer to this question.

77. *TRICHOMONAS VAGINALIS* – SUPPORTING THE CASE FOR ROUTINE SCREENING IN FAR NORTH QUEENSLAND

S. G. Downing and D. B. Russell on behalf of the Cairns Sexual Health Service Clinicians

Cairns Sexual Health Service, Cairns, Queensland, Australia.

The prevalence of *Trichomonas vaginalis* (TV) in Australia has declined over the past 30 years, however rates in Indigenous communities have remained high. We assessed the prevalence of TV in women presenting to the Cairns Sexual Health Service (CSHS) in order to inform the decision as to whether or not TV should be included as part of our routine screening.

Routinely collected data from all women undergoing sexual health screening at the clinic between 1st March and 31st December 2008 was collated and analysed.

Screening, using first void urine PCR testing, was conducted on 549 women. Twenty four women, 4.4% (95% CI: 2.5, 6.1), were diagnosed with TV. The highest prevalence of TV was seen in Aboriginal and/or Torres Strait Islander women (17.9%), overseas visitors (6.0%), those aged <16 years (7.1%) and those 35 years or above (9.0%). Five women with TV had concurrent infections; three with *Chlamydia trachomatis* (CT), one with *Neisseria gonorrhoea* (NG) and one with both CT and NG.

The high prevalence of TV in women presenting to CSHS supports the decision to include TV in routine screening.

78. ABORIGINAL COMMUNITY CONTROLLED HEALTH SERVICES (ACCHS) AND WESTERN AUSTRALIAN COUNTRY HEALTH SERVICES (WACHS) PARTNERSHIP IN DELIVERING SEXUAL HEALTH PROGRAMS IN THE KIMBERLEY

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¹Kimberley Population Health Unit, Broome, Western Australia, Australia.

²Kimberley Aboriginal Medical Health Service Council, Kununurra, Western Australia, Australia.

The Western Australian Aboriginal Sexual Health Team was established in 2005, utilising the '8 way model' approach to provide a comprehensive sexual health service. The Kimberley team consists of 6 members, with an equal number employed by Aboriginal Community Controlled Health Services (ACCHS) and Western Australia Country Health Services (WACHS) sites.

The Kimberley has a history of a positive working relationship in the Sexual Health program, between ACCHS and WACHS sites, which is a necessity considering the equal amount of health services provided by the two across the Kimberley, and the unacceptably high rates of STI's. Regional decisions on STI management and protocols are decided between the Kimberley Public Health Unit and Kimberley Aboriginal Medical Services Council. Annual STI workshop updates are provided by KPHU, with an input from KAMSC and other ACCHS. Sites are also kept in touch with the Kimberley Sexual Health Network.

The STI rates in the Kimberley are an ongoing challenge to find solutions to decrease the burden of disease that the Aboriginal population endure. A solid working relationship between the two main health service providers in Population Health, ACCHS and WACHS, is essential to try to make an impact in this area.

79. CENTRAL AUSTRALIAN STI RISK FACTOR STUDY

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The aims of the study were to: determine the behavioural and situational risk factors for STIs in young Aboriginal people across central Australia and their prevalence; determine the association of these risk factors and STIs; explore the feasibility and acceptability of systematic inquiry into sexual behaviour and associated risk factors in community clinic settings; and develop practice guidelines for individualised risk assessment and the offering of immediate, presumptive STI treatment for asymptomatic persons who present to central Australian community clinics.

A mixed methods research approach was used in the study. Initially, semi-structured interviews were conducted. This information informed the development of a structured questionnaire and visual resource. Subsequently, face-to-face questionnaires were administered during adult health checks or STI checks, and participants were tested for gonorrhoea, chlamydia and trichomonas by NAAT. A venous blood sample was also collected for syphilis screening.

Of the 324 participants who consented for the study, 137 (42%) were female and 187 (58%) were male. Of these, 177 (55%) were aged less than 25 years. A total of 95 (29%) participants were determined to have chlamydia, gonorrhoea or trichomonas.

At multivariate level, being female, younger age group (less than 25 years), having current symptoms and STI history (ever) were sustained as significant predictors of increased risk of STIs (chlamydia, gonorrhoea or trichomonas).

We have established that it is feasible and acceptable to undertake a systematic inquiry into sexual behaviour and associated risk factors in community clinic settings. This study contributes to an extremely small body of research from central Australia regarding risk factors for STIs and contributes to an evidence base to guide the development of presumptive treatment guidelines.

80. ADDRESSING SEXUAL HEALTH DISADVANTAGE IN FAR NORTH QUEENSLAND INDIGENOUS COMMUNITIES

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Tropical Population Health Services, Cairns, Qld, Australia.

Long-standing high rates of bacterial sexually transmitted infections, low levels of sexual health knowledge, low levels of personal risk perception, high levels of social apathy, inadequate condom distribution infrastructure, and the virtual absence of curriculum-based sexual health education in schools provides compelling evidence of sexual health disadvantage among young people in remote Far North Queensland Indigenous communities. World Health Organisation global best practice studies in sexual health promotion and HIV prevention suggest that investment in health promotion strategies is critical to addressing underlying societal factors influencing sexual health risk. The Sexual Health Program within Tropical Population Health Services of Queensland Health has strengthened its capacity in sexual health promotion and committed significant investment towards community-driven strategies to target underlying sexual health risk, including schools-centred, curriculum-based sexual health education, population-wide communications campaigns and youth-focused condom social marketing. This paper reports on the challenges, constraints and occasional successes of those health promotion efforts over the past three years, to address factors underlying sexual health risk by placing the demonstrated sexual health disadvantage of young people squarely on the remote Far North Queensland Indigenous community social and political agenda.

81. PROVIDING QUALITY SEXUAL HEALTH CARE TO AT RISK INDIGENOUS YOUTH IN A NORTH QUEENSLAND SCHOOL

C. M. Vogler¹, D. Russell¹, M. Wenitong² and J. Mein²

¹The Dolls House Sexual Health Service, Cairns District Health Service, Cairns, Queensland, Australia.

²Apunipima Cape York Health Council, Cairns, Queensland, Australia.

In partnership with Apunipima in February 2009 at the request of an Indigenous secondary school north of Cairns, the Dolls House Indigenous Health Workers delivered a comprehensive sexual health component of an Adolescent Health Check. This included safe sex education, condom provision, and ascertainment of sexual activity and a urine PCR for chlamydia, gonorrhoea and trichomonas. Of the 24 adolescents (age range 14–19 years) 10 Sexually Transmissible Infections (STIs) were detected in 7 students. At follow-up the Dolls House Indigenous Health Worker performed contact tracing, treatment, and booked the students in to the Dolls House clinic for full STI testing and more intensive education.

The students are clearly a high risk group for STIs. The sexual health component of the Adolescent Health Check appeared to be acceptable and effective. Factors in the success included the preparatory education that the Indigenous Sexual Health Workers did with some of the students well before the screen, the school's support of the check, placing sexual health in the context of a complete health check, and the excellent rapport established and continued between the students and the Health Workers.

Other school health needs were addressed with Apunipima's advocacy, and support of the school. Student sexual health needs are high and ongoing. Therefore discussions are underway regarding the provision of regular tailored education sessions on abstinence, safe sex and STIs conducted at the school by the Dolls House Health Workers, and commencement of routine ongoing Dolls House STI testing for all new school attenders, and post school holidays testing.

82. SSSAMI THE SAFE SEX SNAKE

P. Ahkit

Anyinginyi Aboriginal Health Corporation.

The Tennant Creek Township (PARRTA) is home to the Warrumungu people and is situated in the NT. 500 km north of Alice Spring and 1000 km south of Darwin. Tennant Creek is a part of the Barkly Region. There are 5 Aboriginal languages that are regularly spoken across the different cultural group living in the region. Warrumungu language is the language for Tennant creek.

The creation of 'Ssssami the Safe Sex Snake' has increased the public profile of Anyinginyi Aboriginal Health Corporation (AHAC). The success of AHAC's sexual health programs in reducing STI rates in the Tennant Creek region can be directly attributed to 'Ssssami the Safe Sex Snake'

'Ssssami the Safe Sex Snake' creates 'feel good messages'

'Ssssami the Safe Sex Snake' promotes safe sex in a fun way, which encourages condom use and safe circles

'Ssssami the Safe Sex Snake' promotes family planning

'Ssssami the Safe Sex Snake' helps break down barriers e.g.

- Age
- Gender
- Cultural sensitivity
- Embarrassment
- language

'Ssssami the Safe Sex Snake' motivates people to seek help and assistance to deal with STI related problems. The Tennant Creek High School students perform 4 Safe sex role plays at our local 'Ssssami the Safe Sex Snake' condom pack launch.

Health Promotion. AHAC is proactive in responding to community needs in regards to community driven health promotion activities 'Ssssami the Safe Sex Snake' is a part of our health promotion Bus. 'Ssssami the Safe Sex Snake' AHAC is in the process of liaising with the community of Tennant Creek to agree to having a yearly calendar week to promote 'Ssssami the Safe Sex Snake' and Sexual Health.

The presentation will begin with an introduction to Ssssami the safe sex snake. Followed by a presentation about the Aboriginal Medical Service in Tennant Creek where Ssssami the safe sex snake lives. This will also be an interactive presentation with the audience being asked to participate in role plays. Role play 1. Man and Women sitting by the camp fire in the desert under the milky way. All of a sudden, superman music begins to play. A pink object flies pass them through the air. Man and Women say, is it a bird, is it a plane, its Ssssami the safe sex snake. Condoms are falling out of the sky. Man says thanks Ssssami you are my hero.

Role play 2. We have a Ssssami the safe sex snake costume. This will be worn by a Health Worker, other Aboriginal health Workers will be dressed in other costumes called Syppy, Chlammy Gonno. The theme from rocy plays and Ssssami the safe sex snake comes out and chases away Syppy, Chlammy and Gonno.

83. A CASE OF MR. SA

M. Bissessor and T. Read

Melbourne Sexual Health Centre, Carlton, Vic., Australia.

A 30 year gym enthusiast presents with painful ulceration of the buttocks and anal cleft, for at least 1 week. He is unable to lie on the bench-press. He has been training for special event for a coveted title. No history of genital herpes. He has male sexual partners and is very careful with condom use for anal sex. He has regular unprotected oral intercourse with known casual sex partners. His last STI check was 3 months ago and was completely negative including HIV. Examination reveals several superficial ulcers in the anal cleft and red sores on his left buttock. He has left sided inguinal lymphadenopathy. The area was swabbed for HSV and *Treponema pallidum* PCR. He was treated presumptively for HSV with valtrex 500 mg b.d. A screen for anal gonorrhoea and chlamydia was done. Results: HSV PCR negative. TP PCR negative. Gonorrhoea negative. Chlamydia positive (anal). His anal chlamydia was treated with azithromycin 1 g stat. He presented 2 weeks later with persistent symptoms. The ulceration and the sores on the buttock had now become confluent. Inguinal lymphadenopathy persisted. An LGV swab was done – subsequently negative. The area was also swabbed for microscopy and culture which yielded the diagnosis which will be discussed during the presentation.

84. A CASE OF RECURRENT HEPATITIS C INFECTION – RISKS OF SEXUAL TRANSMISSION IN MEN WHO HAVE SEX WITH MEN

J. S. Oliphant and N. Perkins

Auckland Sexual Health Service (ASHS), Greenlane Clinical Centre, Auckland, New Zealand.

Since the discovery of the hepatitis C virus in 1989 there has been debate regarding the risks of sexual transmission. While it has been clearly established that percutaneous contact is the most common mode of transmission, hepatitis C can also be sexually acquired, although the efficiency of sexual transmission is far less than with other bloodborne viruses such as hepatitis B or HIV. But has the importance of sexual transmission been overlooked especially in higher risk groups such as those with concurrent STI's including HIV or with higher risk sexual activity?

The case is a 55 year old male attending for regular sexual health screens with ASHS since 2005. He has been diagnosed with gonorrhoea, syphilis, herpes simplex and AIN 2 on different occasions. His sexual risks were unprotected anal and oral sex with casual male partners. There were no percutaneous risk factors.

In June 2007 he presented with acute icteric hepatitis and was diagnosed with hepatitis C at the Auckland liver unit. Tests showed he was Anti HCV (total antibody) reactive and HCV RNA positive 44 IU/ml using Roche Cobas Ampliprep/Taqman HCV test. HCV genotype not detected. He was clinically observed and his HCV RNA was negative by September 2007 and remained negative until February 2008. He was considered to have spontaneously cleared infection.

In January 2008 his HIV Western blot test was positive. In February 2008 his HCV RNA level rebounded up to 111 000 IU/ml and genotype testing showed he had sub-type 2b. He was considered to have been re-infected with HCV and was commenced on interferon and ribavirin for acute hepatitis C infection. Six months post treatment his HCV RNA remains negative and he has been discharged from follow up by the liver unit.

In this case, the possibility of sexual acquisition of hepatitis C was overlooked. In the outpatient clinic letter following his initial presentation, the Auckland liver unit noted ' - has never had a blood transfusion or used intravenous drugs so has no risk factors for hepatitis C infection'. However sexual transmission of hepatitis C can occur and this will be discussed in a literature review of this topic.

85. ADHESIONAL SMALL BOWEL OBSTRUCTION AND PELVIC SEPSIS DUE TO NEISSERIA GONORRHEA

J. S. Doyle, J. Lee and C. O. Morrissey

Infectious Diseases Unit, The Alfred Hospital, Melbourne, Australia.

We present the case of a 40 year-old woman with the diagnostic problem of small bowel obstruction and intra-abdominal sepsis subsequently found to be due to *Neisseria gonorrhoea*.

Our patient presented with a three day history of abdominal pain, distension, dysuria and fever, coinciding with the onset of menstruation. She was a married mother of two and did not report new sexual contacts. Her past history included urinary tract infections, an open appendectomy and multiple laparoscopies for ovarian cysts. On arrival, her temperature was 38.3 degrees, and abdominal tenderness without guarding was maximal in the lower abdomen and left flank. Pelvic examination revealed no cervical discharge or adnexal tenderness.

Initial investigations showed an elevated white cell count ($23.8 \times 10^9/L$) with otherwise normal liver and renal function, and β HCG negative. A mid-stream urine showed elevated leucocytes ($1000 \times 10^6/L$) and red blood cells ($1000 \times 10^6/L$) with no culture growth. An abdominal and pelvic CT scan and transvaginal ultrasound showed no free fluid or collection but mildly distended small bowel loops. High vaginal swabs and first pass urine were collected.

She was admitted to hospital and commenced on intravenous ampicillin, ceftriaxone and metronidazole, with involvement of general surgeons who also advised conservative management of the bowel obstruction.

On day three of her admission, her husband reported that he had concurrently been diagnosed and treated for *Neisseria gonorrhoea* urethritis. Azithromycin was added to her antimicrobial regimen. Her bowel obstruction worsened clinically and radiologically, necessitating laparoscopy on day four. At operation, there was evidence of gross intra-abdominal sepsis with inflammatory adhesions causing obstruction requiring division and washout. Operative swabs revealed polymorphs but were stain and culture negative. Endocervical swab and urinary polymerase chain reaction (PCR) subsequently confirmed the diagnosis of gonorrhoea.

Pelvic inflammatory disease (PID) due to gonorrhoea can present similarly to other abdominal pathologies. This case illustrates that the apparent absence of epidemiology factors for sexually transmitted infections should not exclude their early consideration and treatment. Additionally, while inflammatory adhesions are recognised as complication of PID, they rarely cause mechanical bowel obstruction as demonstrated here.

86. HOW TO SET UP AN ANAL CANCER SCREENING PROGRAM: HOW DO YOU SCREEN?

L. P. Botes^{1,2} and R. J. Hillman^{1,2}

¹Sexually Transmitted Infection Research Centre (STIRC), University of Sydney, Westmead, New South Wales, Australia.

²Applied Medical Research Centre (AMRC), St Vincent's Hospital, Darlinghurst, New South Wales, Australia.

There are increasing calls for anal cancer screening programs, particularly in groups at very high risk. This session will:

- Identify those most at risk of anal cancer
- Compare acceptability of differing sampling methods
- Discuss the sensitivity and specificity of cytological specimens
- Describe current screening programs
- Introduce potential new screening technologies.

87. HOW TO SET UP AN ANAL CANCER SCREENING PROGRAM: HOW DO YOU MANAGE AIN?

R. J. Hillman

Sexually Transmitted Infection Research Centre (STIRC), University of Sydney, Westmead, New South Wales, Australia;
Applied Medical Research Centre (AMRC), St Vincent's Hospital, Darlinghurst, New South Wales, Australia.

High grade AIN is widely regarded as comparable to CIN2/3, and the direct precursor of anal cancer. This session will:

- Review the data underlying these assumptions
- Describe current treatment guidelines
- Discuss current treatment modalities
- Introduce potential new treatment methods.

88. HOW TO SET UP AN ANAL CANCER SCREENING PROGRAM: IS IT WORTH IT?

J. S. Anderson

National Centre In HIV Epidemiology and Clinical Research, Darlinghurst, New South Wales, Australia.

Screening has been proposed for high grade anal intraepithelial neoplasia. This session will:

- Review the cost-effectiveness data from overseas
- Consider the value for money from the Australian perspective
- Discuss the data required to improve decision making.

89. WHO WANTS IT? WHAT MEN KNOW ABOUT ANAL CANCER

M. Pitts

Australian Research Centre in Sex, Health and Society, La Trobe University, Melbourne Victoria, Australia.

Whilst knowledge of HPV and cervical cancer have been extensively studied in women, there are comparatively few studies of HPV and anal cancer knowledge that include men. This presentation will review what the current research findings can tell us about:

- Knowledge of HPV
- Understanding of risk factors for anal cancer
- Sexual practices as they relate to HPV
- Attitudes and knowledge of screening for anal cancer.

90. A LIFETIME OF HIV/AIDS

D. Cooper

National Centre in HIV Epidemiology & Clinical Research.

The history of HIV, from the clinician's viewpoint, is dominated by the history of antiretroviral therapy (ART), as the single most important measure in tackling the HIV epidemic. The outcomes and interpretation of some of the original ART trials have influenced the development of treatment guidelines and the course of ART implementation. The early studies examining the use of acyclovir in the treatment of HIV and the incremental implementation of new drugs, progressing from mono and dual therapy to triple ART therapy, are good examples of the influence that particular studies have had on the subsequent treatment of HIV in the clinic. This progression of course was not without complications; good examples being the recognition and investigation of the underlying mechanisms of lipodystrophy and the identification of an association between abacavir and myocardial infarction. The development of ART demonstrates the importance not only of the original ART trials but also continued investigation of specific drugs and regimens in the clinic to identify and manage any subsequent treatment issues that may become apparent after the rollout of these therapies.

91. ADDRESSING SOCIAL DRIVERS OF HIV/AIDS

J. Auerbach

Science and Public Policy, San Francisco AIDS Foundation, San Francisco, California, USA.

Interest in enhancing and applying social research in HIV prevention has intensified in recent years with greater recognition of the role of social context and social forces (known as 'social drivers') in both fueling epidemics and mounting effective responses. This recognition has led to a sense of urgency about identifying and deploying social-level, or 'structural', interventions. But, the arsenal of evidence-based structural interventions is small, and developments in this area are hampered by significant methodological and evidentiary obstacles that have not been fully explored and redressed. This presentation will examine key issues in the conceptualization, operationalization, and measurement of social drivers of HIV/AIDS and evaluation of attempts to modify them. It will argue for new approaches to HIV prevention research that engage social drivers, rethink causal pathways, and employ a range of methodologies to have a greater impact on HIV epidemics everywhere.

92. HPV AND HIV – WHY DO HPV-INDUCED LESIONS NOT RESOLVE?

S. H. van der Burg

Department of Clinical Oncology, LUMC, Leiden, The Netherlands.

HIV and HPV can both cause chronic infections and are acquired during sexual contact. In general the protective immune response to chronic viral infections is a polyfunctional type 1 response of both CD4+ helper T-cells and CD8+ cytotoxic T-cells. Indeed a successful defence against HPV16 infection is commonly associated with the installment of a systemic effector T-cell response against the viral early antigens. E2, E6 and E7. HIV infection results in a progressive loss of CD4+ T-cells that is associated with an increased prevalence of HPV infections, type-specific persistence and an increase of malignancies. On the one hand this illustrates the important role of HPV-specific CD4+ helper T-cell immunity, on the other it shows the Achilles heel of the HPV-specific immune response. The use of highly active antiretroviral therapy (HAART) results in a rapid disappearance of HIV and a reconstitution of systemic CD4+ T-cell levels through redistribution and enhanced thymic output. As a consequence immunity to opportunistic pathogens is restored when the levels of pathogen-specific CD4+ T-cells rise as a result of exposure to these pathogens. Notably, the rates of HPV-induced diseases have not declined since the introduction of HAART indicating that the use of HAART has no beneficial effect on HPV-induced diseases. This was to be expected as our studies of the spontaneous immune response to HPV in patients with LSIL and HSIL lesions in non-immunocompromised subjects already revealed that patients with LSIL or HSIL initially failed to build a protective HPV-specific T-cell response and often mounted a dysfunctional HPV-specific T-cell response reflected by their incompetence to produce pro-inflammatory cytokines (e.g. IFN γ , IL-2) and an HPV-specific suppressive T-cell response during progression of the HPV-induced lesion. The induction of such a non-protective immune response in patients with progressing lesions is likely to be the result of increased dose of antigen presented to T-cells in a non-stimulatory suppressive local environment. The relief of immunosuppression through HAART, therefore, may put HIV-infected patients in a similar situation as non-immunocompromised patients but will not restore proper presentation of HPV antigens to the immune system. Therapeutic vaccines, delivering HPV antigens in a stimulatory context, may be an option. Recently, we have shown that vaccine-induced restoration of HPV16-specific Th1/CTL responses is associated with the regression of HPV-induced lesions in patients with HPV16-induced lesions of the vulva, one can envisage that such a therapeutic vaccination of HIV-patients on HAART may have similar clinical outcome.

93. HUMAN PAPILLOMAVIRUS (HPV) – ASSOCIATED CANCERS IN IMMUNE DEFICIENT POPULATIONS

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Over the past decade, studies in solid organ transplant recipients and in people with HIV have demonstrated that infection-related cancers occur at increased rates. For some of these cancers, such as those related to the Epstein-Barr virus (non-Hodgkin lymphoma) and Kaposi's sarcoma herpesvirus (Kaposi's sarcoma), cessation or reduction of immune deficiency is rapidly followed by dramatic decreases in incidence. In contrast, for some other cancers, including the HPV-related cancers (of the cervix, vulva/vagina, anus and oro-pharynx) there is no evidence of reduction in rates. This is of particular concern for anal cancer, where the main population with HIV in Australia—homosexual men—have increased rates even when HIV negative. The incidence of anal cancer in people with HIV has not decreased in the era of HAART, and there is some evidence it may be increasing. In Australia, anal cancer has recently become the most common non-AIDS defining cancer, and the third most common cancer overall, in people with HIV.

Prevention of anal cancer related morbidity in homosexual men should be an urgent public health priority. Whether or not HPV vaccination will prevent HPV-related anal cancer is unknown, but data on prevention of anal cancer precursors will be available soon. If it proves effective, HPV vaccination would need to occur before the commencement of sexual activity, as anal HPV infection in homosexual men is nearly universal. Males are currently not vaccinated in the Australian HPV vaccination program, so anal cancer in homosexual men will not be prevented. In the absence of an effective vaccination program, much attention has been given to screening for anal cancer precursors, to allow for early diagnosis and treatment and cancer. The extraordinarily high prevalence of HPV infection and of pre-cancerous squamous intra-epithelial lesions in these populations, and concerns regarding the effectiveness of treatment, have impeded implementation of screening. Pragmatic means of screening for anal cancer in homosexual men require investigation.

94. MAPPING EFFORTS TO BETTER UNDERSTAND THE EPIDEMIOLOGY OF STIS AND BBV AMONG ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE IN AUSTRALIA

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National Centre in HIV Epidemiology & Clinical Research.

For almost two decades the main sources of information on the occurrence of sexually transmissible infections and blood borne viruses among Aboriginal and Torres Strait Islander people, have arisen from routine notifications required by public health legislation in Australia. Despite this there remain considerable gaps in information related to Aboriginal and Torres Strait Islander people living in regional and urban areas of Australia where the majority of this population reside. In addition there have been no national surveys conducted to understand changes in sexual behaviour among Aboriginal and Torres Strait Islander people, despite annual or periodic surveys conducted in all other high risk populations.

Several initiatives have been recently introduced or are planned to provide a more comprehensive picture of trends in STI and BBV in Aboriginal and Torres Strait islander people. The Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS) reports on Chlamydia infections outcomes in 90 clinical services across Australia and provides data specifically related to Aboriginal and Torres Strait Islander people. A data linkage project will be undertaken in 2010 to improve accuracy and completion of STI and BBV data in NSW and a national behavioural survey of young Aboriginal and Torres Strait Islander people is planned to be conducted from 2010 onwards.

These initiatives will provide a more comprehensive map in Australia of trends in STI and BBV in Aboriginal and Torres Strait islander people and provide valuable information to inform mathematical modelling.

95. IDENTIFYING AND ADDRESSING GAPS IN STI SCREENING AND MANAGEMENT AT ABORIGINAL COMMUNITY CONTROLLED HEALTH SERVICES (ACCHS) IN THE KIMBERLEY REGION OF WESTERN AUSTRALIA

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²Kimberley Aboriginal Medical Services Council (KAMSC).

A review of STI testing and management was conducted at 3 Kimberley Aboriginal Medical Services Council (KAMSC) affiliated services in the Kimberley. Laboratory data indicates that PCR testing at KAMSC affiliated ACCHS has increased in the last 5 years while the yield of positive chlamydia tests has decreased. It was not clear whether this represented a true decrease in prevalence or a decrease yield secondary to an increase in testing among lower prevalence populations. Data on PCR and syphilis testing was therefore extracted at individual ACCHS to obtain more information about the patterns of testing, yield of positive test results and case management. Data was collated and fed back to clinic staff to identify and address gaps in STI testing and management. Despite an increase in STI screening secondary to the implementation of the adult health check, gaps in testing and management were identified and appeared to be common across different services. Common gaps included the following; low testing rates amongst the highest risk age groups; significant amount of testing amongst age groups at lowest risk of infection; gaps in management of women presenting with signs and symptoms of chlamydia and gonorrhoea. PCR and syphilis testing among age groups at least risk of STIs contributes to a significant amount of time and resources spent at both primary and public health services and diverts time and resources away from where they would be more cost effective. Data collected, fed back and utilised at the clinic level has enabled a more detailed understanding of gaps in STI screening programs and ways to address those gaps effectively.

96. CHLAMYDIA: THE PACIFIC RESPONSE IN A (COCO) NUT SHELL

A. McNulty

Sydney Sexual Health Centre, NSW, Australia.

Chlamydia prevalence in Pacific island states and territories in recent surveys ranges from 6–29% in antenatal clinic populations. As a result, a pilot program to introduce chlamydia and gonorrhoea testing commenced in 2007–08. Results of the pilot evaluation and ongoing program implementation and expansion will be discussed.

97. SEXUAL PRACTICES OF PLWHA ON ART IN PNG

P. Siba

Papua New Guinea Institute for Medical Research.

Papua New Guinea's (PNG) epidemic has and continues to be spread sexually. In order to respond to the expanding epidemic PNG began introducing antiretroviral therapies (ART) in 2004. Improvements in health and well being on ART and beliefs of reduced infectivity have been anticipated to increase sexual activity, particularly unsafe sex, in the developing world. Is this true of PNG? In this paper we describe the sexual practices of people with HIV in PNG who are on ART.

In a purposive sample from clinics and PLWH care centres, 374 people with HIV on ART in six provinces throughout PNG were surveyed. Participants had to be over the age of 16 and on treatment for more than two weeks to participate.

Just over a third (39.4%) reported that they had had sex since being diagnosed with HIV and 37.9% had had sex in the last 6 months. Of those with a regular partner 94.4% identified that they had had vaginal sex in the past six months. Fewer than half (46.2%) of the participants who had had vaginal sex with their regular partner in the last 6 months reported that they always used condoms, however there was higher condom use (62.2%) the last time participants had vaginal sex with their regular partner.

Only 11 people (8.5%) had anal sex with a regular partner. However, only 2 of those (18.2%) reported that they used a condom the last time they had anal sex with their regular partner. Overall there were low rates of reported casual sex, men paying for sex and men who reported having sex with men.

There was a low rate of sexual activity amongst the sample in this study. Condom use was relatively high but of concern is the extremely low use of condoms for anal sex. Attention needs to be paid to increasing awareness of anal sex as a means of HIV transmission. Ongoing research into the sexual practices of people with HIV on ART in PNG is needed.

98. IMPROVING PARTNER NOTIFICATION: HOW CAN WE USE THE EVIDENCE TO IMPROVE PRACTICE?

C. Estcourt

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The consequences of re-infection with bacterial STIs have considerable personal and public health implications. Partner notification is a key intervention to prevent infection transmission & re-infection. Patient referral, which is the most commonly practiced PN method is failing despite considerable effort. Patient delivered partner therapy, the mainstay of expedited partner therapy, is the one intervention most likely to improve PN outcomes. However, it is not considered legal in many countries, including Australia & UK. I will discuss elements of PN practice for which there is evidence of effectiveness, including Accelerated Partner Therapy with emphasis on what we can introduce into our practice now and in the future.

99. OVERVIEW AND KEY ISSUES OF THE DOHWA/ASHM CONTACT TRACING & PARTNER NOTIFICATION PROGRAMS

L. Crooks

Australasian Society for HIV Medicine, Australia.

Levinia Crooks will present on two projects currently being conducted in Western Australia (WA). The Contact Tracing project involves the development and piloting of an online educational package on HIV testing and contact tracing issues with a particular focus on rural and remote settings and hard-to-reach populations, including indigenous Australians, mobile workers and Culturally and Linguistically Diverse (CALD) communities in WA. The Partner Notification project aims to increase the capacity of general practice staff in Western Australia to undertake partner notification for Chlamydia. This project aims to provide general practitioners and their clinical staff with easy to use, time efficient strategies and resources to encourage partner notification.

100. QLD CONTRACT TRACING SUPPORT OFFICER PROGRAM TRIAL

J. Leamy

Cairns Sexual Health Service, Australia.

Joanne Leamy will report on the progress of the Queensland Contact Tracing Project. This 3-year project commenced in 2009 as a result of a review of contact tracing services in Queensland. Five regional contact tracing support officers have been appointed to take a practical and sustainable approach to increasing the capacity of clinicians to undertake contact tracing focusing on the areas of highest identified need – Gold Coast, Sunshine Coast, Cairns, Townsville, Mt Isa, Cape York and Torres Strait. This session will focus on the first four months of planning and development of the Project, with a look at some of the challenges and opportunities working in a team of five that is spread over a distance of 1700 km.

101. IS PrEP BETTER THAN CURE? – THIS HOUSE BELIEVES THAT THE BENEFITS OF HIV PRE-EXPOSURE PROPHYLAXIS OUTWEIGH THE RISKS

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Pre-exposure prophylaxis (PrEP) has been shown to be effective in reducing the acquisition of SHIV in monkeys. Trials of PrEP in humans are underway around the world and will report results in the coming year. The introduction of effective PrEP could have a substantial impact on HIV in Australia but many questions remain: Is it safe? What impact will it have on risk behaviour? Who should have it? Who shouldn't have it? Can we afford it? How will it affect other types of health promotion? This debate will consider the issues from all directions with an expert panel from Australia and the United Kingdom. Come along, listen to the arguments and have your say.