

**Methods** January–December 2010, we collected information on demographic and behavioural risks in the past 12 months from MSM seeking anonymous HIV testing. We examined risks for HIV infection and calculated population attributable fractions (PAFs) to identify relative contributions of exposures to overall infection.

**Results** Overall, 81 (2.7%) newly diagnosed infections were identified among 3045 men. Men were median age 31, 64% white, 9% black, 17% Hispanic, and 10% other race/ethnicity. 14% had been diagnosed with an STI in the past year. Among clients for whom behavioural data were available (98%), black race, STI history, receptive anal intercourse (RAI), not always using condoms for RAI,  $\geq 3$  partners for RAI, methamphetamine use, sex with an HIV positive partner, and sex with a partner of unknown serostatus were associated with an increased odds of HIV infection in univariate analysis. The univariate association between methamphetamine use and HIV infection was partially mediated by sexual risk behaviour. In multivariable logistic regression, black race (OR, 1.7; 95% CI 1.2 to 2.4), STI history (OR, 2.0; 95% CI 1.1 to 3.6), not always using condoms for RAI (OR, 2.6; 95% CI 1.5 to 4.6), and RAI with  $\geq 3$  partners (OR, 2.2; 95% CI 1.3 to 3.9) were significantly associated with HIV infection. Adjusted PAFs were 13.7% (95% CI -1.4 to -26.6) for STI history; 36.7% (95% CI 12.2 to 54.4) for not always using condoms for RAI; and 28.8% (95% CI 5.5 to 46.3) for  $\geq 3$  RAI partners. The total combined PAF for these factors adjusted for race/ethnicity was 58.8% (95% CI 28.5 to 72.0). While 81% of HIV-infected men reported at least one risk factor and 11% reported all three, overall, 51% of men screened had at least one of these factors: STI history (14%); not always using condoms for RAI (32%); and  $\geq 3$  RAI partners (27%).

**Conclusions** STI history, inconsistent condom use, and  $\geq 3$  sex partners for RAI accounted for 59% of new HIV infections, but were present in half those tested. While we identified behaviours for intervention content, we did not identify sub-groups to target. Interventions that address condom use efficacy and reducing numbers of partners for RAI, including the effect of substance use on sexual decision making, should be considered for men reporting these risks.

**P2-S6.11 THE COST-EFFECTIVENESS OF SCREENING MEN WHO HAVE SEX WITH MEN FOR RECTAL CHLAMYDIAL AND GONOCOCCAL INFECTION TO PREVENT HIV INFECTION**

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**Background** Men who have sex with men (MSM) who have a current or recent history of rectal gonococcal (GC) or chlamydial (CT) infection are at greater risk for HIV than men with no history of rectal infection. This increased risk may be due to biological or behavioural factors. Screening and treating MSM for rectal CT/GC infection may help reduce any increased biological susceptibility to HIV infection and identify men at increased risk of HIV infection.

**Methods** We used a Markov state-transition model to examine the potential impact of screening MSM for rectal CT/GC infection. Observational data from San Francisco were used to estimate the incidence of rectal CT/GC in MSM, including repeat infection, and the HIV incidence in MSM with and without current or recent rectal CT/GC infection. Men were categorised into four risk strata based on the number of rectal infections they had experienced. We assumed the increased risk of HIV infection was due to a combination of factors: biological (relevant only when a given person had an untreated rectal CT/GC infection) and behavioural (relevant for a period of time after a rectal CT/GC infection was treated or resolved

without treatment). The quality-adjusted life year (QALY) reduction due to HIV infection, the direct costs for testing and treatment for CT/GC, and the direct lifetime medical costs per case of HIV were drawn from the literature. In sensitivity analyses we varied assumptions about the duration of rectal CT/GC infection, biological vs behavioural attribution of the increased risk of HIV infection in those with rectal CT/GC, and incidence of repeat rectal CT/GC infection. We assumed a fixed proportion of MSM (both HIV-infected and HIV-uninfected) would be screened annually. HIV prevention was the only benefit of screening that we assessed; we did not include other health and economic benefits of treating rectal CT/GC.

**Results** In many scenarios, screening MSM for rectal CT/GC infection was cost-saving in that the discounted cost of screening and treatment was less than the discounted cost of averted HIV infections see Abstract P2-S6.11 Table 1. The cost per QALY gained through rectal CT/GC screening ranged from  $< \$0$  to  $\$50\,000$  in almost all scenarios examined, except when the elevated HIV risk in MSM with rectal infection was mostly attributed to behavioural factors rather than biological.

**Conclusions** Preliminary results suggest that screening MSM for rectal CT/GC infection can be a cost-effective intervention to reduce HIV infection.

Abstract P2-S6.11 Table 1

Variable	Baseline	Variable	Baseline
Annual incidence of rectal CT/GC infection, HIV-uninfected	0.058	Annual probability of transition from higher-risk group to lowest-risk group	0.29
Annual incidence of rectal CT/GC infection, HIV-infected	0.078	Duration of rectal CT/GC infection in the absence of treatment	26 weeks
Annual HIV incidence, men with 1 rectal CT/GC infection	0.018	Cost of rectal CT/GC testing*	\$44.89
Annual HIV incidence, men with 2 rectal CT/GC infections	0.034	Cost of treatment*	\$37.14
Annual HIV incidence, men with $>2$ rectal CT/GC infections	0.15	Discounted lifetime cost of HIV infection*	\$379 668
Annual rectal CT/GC repeat infection rate	0.15		

\*Costs are in 2010 US dollars.

**P2-S6.12 SEXUAL DEBUT AND SEXUAL HEALTH: IS EARLY AGE OF FIRST ANAL INTERCOURSE ASSOCIATED WITH HEIGHTENED HIV VULNERABILITY AMONG GAY MEN?**

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**Background** To explore the long-term sexual health implications for gay men having first anal intercourse (FAI) at an early age.

**Methods** A nationwide online survey was conducted among 854 Australian gay men born between 1944 and 1993 (16–65 years).

**Results** Age at FAI dropped sharply from a median of 35 years among men born 1944–1953 to 18 years among men born 1984–1993. At their most recent sexual encounter, men who reported FAI at age 16 years or younger were more than twice as likely to have had receptive anal intercourse or reciprocal anal intercourse (both insertive and receptive in the same sexual encounter), and were almost twice as likely to report having more than 10 sexual partners in the past year. These men were also nearly twice as likely to have become HIV-positive since their sexual debut and were several times as likely to report having had a hepatitis A or C diagnosis. Additional features of the sexual health and behaviour of gay men who report early FAI will be presented that further demonstrate a need to pay close attention to age at FAI.

**Conclusions** Gay men who report early FAI are at higher risk of HIV than those who report later FAI, and are more likely to have recently engaged in risky sexual behaviour. Discussion will focus on explaining these patterns and why health service providers need to pay attention to age at FAI.

**P2-S6.13 GAY MEN'S ASSESSMENT OF SEXUAL AND SOCIAL RISKS IN THE CONTEXT OF A RECENT HIV-POSITIVE DIAGNOSIS**

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**Background** Technological innovations in HIV testing that allow for the diagnosis of very recently-acquired HIV infections provide opportunities to understand sexual and social risk perceptions before and after an HIV-positive diagnosis. Longitudinal interviews with a group of gay men who have received an early or acute HIV diagnosis represent an important opportunity to understand risk assessment beyond individual-level paradigms of risk analysis and to broaden our understanding of social and structural risk factors associated with HIV infection, diagnosis and disclosure.

**Methods** Study recruitment is being conducted through six clinical sites in British Columbia, Canada (April 2009–December 2012) by the CIHR Team in the Study of Acute HIV Infection in Gay Men. Participants (n=12 at time of analysis) completed a series of self-administered questionnaires and semi-structured face-to-face interviews. Baseline qualitative interviews were recorded, transcribed verbatim and analysed. A thematic analysis, informed by a social organization of knowledge perspective, was conducted.

**Results** Three interrelated domains of risk assessment emerged from the interviews. First, we explicate how men calculated the epidemiological or sexual risks of transmitting HIV before and after their diagnosis, and how such an assessment informed their sexual behaviours. Second, men described a myriad of experienced and perceived social risks, such as stigma and rejection, associated with the disclosure of their HIV-status to their family, friends, colleagues and intimate partners. Third, men identified potential problems with technologies of status notification which create a set of institutional risks related to the processes by which patients learn of their HIV-positive status. The relationship between these textually-mediated fields of risk is examined.

**Conclusion** A stratified conception of risk allows us to understand the everyday situations in which people assess HIV-related 'dangers' in their social and sexual lives. This formative research has important implications for educational campaigns on HIV transmission risk assessment for both HIV negative and positive gay men. This work can also inform counselling and support services to address how disclosure risks are negotiated during an early or acute HIV diagnosis. Important implications for clinical and public health practices, including how and when people are given their HIV diagnosis, are raised.

**P2-S6.14 SEXUAL BEHAVIOUR, VULNERABILITIES AND CLINICAL INTERVENTION AMONG MEN WHO HAVE SEX WITH MEN (MSM) ATTENDING STI CLINIC; STUDY FROM SOUTH INDIA**

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**Introduction** Timely uptake of clinical services by highly mobile MSM is pre-requisite to halt and reverse STI prevalence among

communities in India. It is imperative to understand risk behaviour and vulnerable factors that lead to the spread of STI among communities. A study was undertaken to understand the sexual behaviour, vulnerabilities, among MSM attending STI clinic of the CBO at Kancheepuram District, Tamilnadu, India.

**Method** In the study 69 (72%) clinic attendees for a period of 9 months were followed up and interviewed at the STI clinic within the project. Consent and commitment was taken from the clinical attendees to be enrolled in the study. The project counsellor administered the questionnaire followed by clinical examination by the project Clinical provider.

**Results** Among the 69 MSM, 75.3% were 20–30 years & 11% were 31–40 years, 4.3% were above 50 years. Majority were from lower socioeconomic strata of the society and consisted of illiterate people also. 10% were uneducated, 27% Graduates and 44% had 5–10th grade education. About one-third (23.2 %) were married heterosexually. 65% reported travel to other states and 88% reported travel to other districts during the period of study. Among these 70% reported unprotected anal sex with casual partners during travel. Sexual behaviour: During the study period more than two-third (75.3%) had anal sex and all 69 MSM had oral sex. Condom usage, before and after counselling was 6% and 53.6% respectively. 15.9 % had sex with female sex workers and 25% received money for sex. 43% MSM had sex only for pleasure and 32% have sex for both pleasure and money.

**Conclusion** It is imperative that the project develop specific programs like Partners meet or Lovers meet to introduce their partners to the project and thereby sensitise them on prevention of STI and increase condom use. Programs like "pre-departure counselling" about risks on unprotected casual encounters for MSM planning travel and "post-travel STI screening" should be attempted. Regular and periodic STI screening among MSM and partners may be implemented. This will help the project in addressing the risk of transmission of infections among the partners. Partners meet will be a platform for addressing greater Sexual behavioural issues beyond normative clinical interventions. Early diagnosis and Intervention of anal STI, regular Condom use and repeated Counselling are imperative to halt and reverse the STI epidemic among the MSM community.

**P2-S6.15 INVESTIGATING THE CRITICAL PROGRAMME COMPONENTS OF HIV PREVENTION PROGRAMME AMONG MSM-TS IN BANGALORE, KARNATAKA**

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**Background** A number of studies in the context of HIV/STI epidemic and related vulnerability have focused on the risk reduction of HIV/STI prevalence and condom use among female sex workers (FSWs). However, such studies focusing the men having sex with men (MSM) and transgender remains limited. Since the risk reduction of HIV/STI vulnerability among MSM-T are equally important, a systematic study is required to identify the critical programme indicators which increases the condom use and reduces HIV/STI prevalence among MSM-Ts.

**Methods** Two rounds of IBBA data collected from the urban parts of the Bangalore district are used. Bi-variate analysis is used to cross-classify the outcome measures by those who are exposed to the programme than those who are not, whereas the application of binary logistic regression analysis is done to get the adjusted effect of programme indicators on condom related outcomes (condom breakage in past 1 month, zero unprotected sex acts with commercial clients in past 1 month, condom use at last sex with