

INDUCTION OF BROADLY REACTIVE MUCOSAL IMMUNITY BY ORAL DELIVERY OF A MULTIVALENT HIV VACCINE

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Plain Language Summary: Because HIV infection is predominantly transmitted via mucosal surfaces, this warrants the exploration and characterization of protective immune responses in mucosal tissues. We have previously developed an innovative vaccine based on the genetic mutability and diversity of variable HIV-1 epitopes. This polyvalent peptide vaccine has been shown to induce a broadly reactive peripheral immune response in mice and macaques (Azizi A, *J of Immunology*, 2008), however, the level of mucosal immune responses in immunized macaques was not sub-optimal. Our group recently developed a lipid-bile vesicle as an oral vaccine delivery system for the induction of mucosal immunity within mucosal tissues. We have demonstrated that oral delivery of similar synthetic peptide antigens against influenza hemagglutinin protein induces reproducible protection in a well established ferret challenge model. In this study, we take advantage of this technology to entrap our Variosite-based HIV-1 vaccine into this lipid-based vesicle to develop a novel, orally-administered vaccine which enhances both peripheral and mucosal immune responses. The potency and breadth of the candidate vaccine was evaluated in a mouse model. The results demonstrate strong immunogenicity in both peripheral and mucosal sites.

Objective: Herein, we propose that the induction of a broad cross-subtype specific HIV-1 mucosal and systemic immune response may correlate with the prevention of disease and facilitate the development of an effective HIV vaccine. The objectives for this study were as follows: i. Formulate and characterize (analytically) a synthetic, mucosal vaccine by encapsulating HIV-1 Variosite immunogens into a lipid vesicle. ii. Evaluate the immunogenicity and efficacy of the entrapped polyvalent HIV-1 peptide vaccine in an animal model.

Methods: Retention and stability of Variosite formulations within the lipid vesicles were determined using quantitative and qualitative biochemical assays. Mice were primed orally with the two different forms of entrapped lipopeptides plus cholera toxin adjuvant, followed by an intra-muscular boost with the naked lipopeptides plus TLR7/8 agonist as adjuvant. Control groups were immunized with empty lipid vesicles or/and adjuvants. The breadth of cross-subtype humoral and cellular immunity was determined in peripheral and mucosal sites.

Results: The oral delivery of our Variosite-based HIV-1 vaccine in bilosomes induced a broad IgA antibody response in sera, feces, and lung lavage samples of immunized mice. The level of IgA antibody titer was decreased after intra-muscular vaccination, however, a high level of IgG was shown after the last vaccination. Mice immunized with the candidate HIV-1 vaccine showed high proliferative immune responses to a pool of HIV-1 peptides and gp120 proteins. The candidate vaccine also elicited a broadly reactive cellular response against a panel of HIV-1 subtypes after the last boost, suggesting that the vaccine was capable of eliciting both humoral and cell-mediated immune responses.

Conclusions: The data indicate that the incorporation of multiple HIV-1 Variosites into a lipid based oral delivery system is a suitable strategy to generate IgA response in mucosal compartments. Our findings suggest that induction of mucosal and peripheral immune responses at different sites can be controlled by choosing appropriate vaccination routes.

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MULTIPLE TANDEM COPIES OF GP41 EPITOPES EXPRESSED IN GAG VIRUS-LIKE PARTICLES ELICIT POTENT ANTIBODY RESPONSES IN A HETEROLOGOUS DNA AND ADENOVIRUS IMMUNIZATION IN MICE

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Plain Language Summary: Eliciting potent and relevant antibody responses against HIV-1 still remains a challenge for current vaccine strategies. We have designed a construct that expresses multiple copies of antibody-inducing epitopes from well conserved gp41 regions in immunogenic gag virus-like particles. Our construct expresses potent systemic and mucosal antibody responses against these desirable HIV targets and the antibody responses increase significantly as the number of inserted copies is increased. Furthermore, our vaccination strategy induces both antigen-specific cellular immunity and epitope-specific antibody responses in the blood and mucosal compartments of immunized mice.

Objective: To design a construct that elicits potent antibody responses against the gp41 membrane proximal region (MPR) epitopes ELDKWS and NWFDIT, and to deliver such a construct in a vector system that can induce both systemic and mucosal immunity. To prove the principle that multiple tandem repeats of an epitope in a construct can significantly increase the antibody response raised against it.

Methods: Two copies of the MPR epitopes were inserted in tandem at the C-terminus of HIV-1 Gag. This Gag+epitope construct was expressed by DNA and replication-defective adenovirus (rAd) vectors and administered to C57Bl/6 mice to characterize the antigen-specific immune responses against gag and the MPR region. Another set of DNA and rAd vectors were generated that expressed either one, three or five tandem copies of the ELDKWS epitope to test the multiple repeat principle. Mice were administered DNA intra-muscularly with CpG followed by electroporation and the rAd was delivered intra-nasally. Serum samples, vaginal washes and fecal pellets were collected and the epitope-specific antibodies were measured by ELISA.

Results: We have observed that increasing the number of copies of the ELDKWS epitope within the construct did significantly increase the levels of IgG against it upon a homologous DNA+DNA and heterologous DNA+rAd immunization in mice. The response generated against the MPR epitopes was characterized: potent IgG and IgA levels were elicited in the serum, vaginal washes and fecal pellets against ELDKWS and NWFDIT specifically. Furthermore, anti-gag cellular and humoral responses were observed. We have also determined that the use of CpG as an adjuvant with DNA delivery and the heterologous DNA+rAd immunization regime significantly improves the antigen-specific antibody response.

Conclusions: These results show that our construct elicits potent antibody responses against the MPR region when expressed in Gag virus-like particles. The antibody response can be further enhanced by increasing the copy number of the inserted epitopes and by delivering the Gag+epitope construct in a heterologous DNA+rAd immunization in mice.

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EVALUATING THE ANAMNESTIC RESPONSE TO HBV AMONG PERSONS WITH HIV AND LOSS OF PROTECTIVE LEVELS OF HBSAB AFTER INITIAL SEROCONVERSION TO THE RECOMBINANT HBSAG VACCINE

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Plain Language Summary: Co-infection with Hepatitis B Virus (HBV) and HIV leads to increased liver-related illness and death. HBV vaccine provides an opportunity to prevent HBV through the development of protective levels of HBV antibodies and other mechanisms that provide immune memory. Studies indicate that although protective levels of HBV antibodies wane after successful HBV vaccine in those with HIV, little information is available on immune memory. If immune memory persists, the need to provide booster doses of the HBV vaccine when levels of HBV antibodies fall is likely not necessary. We tested in the laboratory HBV-specific immune memory among persons with HIV who lost protective levels of HBV antibody after successful vaccination.

The Challenge: Is an anamnestic response present among individuals with loss of protective levels of HBV surface antibodies (HBsAb) after initial seroconversion to the recombinant HBV surface antigen (HBsAg) vaccine?

Our Approach: We conducted a sub-study of a retrospective cohort evaluating factors associated with loss of protective level of HBsAb after initial seroconversion in response to the recombinant HBsAg vaccine among persons with HIV. Ten study participants with loss of protective levels of HBsAb and a corresponding sample with persistent protective levels of HBsAb were randomly selected. T-cell proliferation assays to HBsAg were then determined in vitro prior to receipt of boosters. Persons with a loss of protective levels of HBsAb then received a booster dose of HBV vaccine (40mg Engerix®) with determination of HBsAb levels at least one month thereafter.

Key Findings: Of the ten individuals receiving a booster dose of vaccine, all developed HBsAb > 10mIU/ml. T-cell proliferation in response to HBsAg was not significantly different between those with loss of protective levels of HBsAb and those without ($p=0.099$). T-cell proliferation response was significantly associated with higher CD4+ cell levels ($p=0.008$) with poor response in those with CD4+ cell count of < 500 cells/mm³.

Impact on Policy and Practice: T-cell proliferation response among persons with HIV to HBV is poor among vaccinated individuals with CD4+ cell counts less than 500 cells/mm³ indicating a potential susceptibility to HBV if protective levels of HBsAb are not present. These same individuals respond to a booster dose of the HBV vaccine. If confirmed in a larger sample, a potential strategy to maintain protective immunity in this population would be to follow levels of HBsAb and boost if levels fall below the threshold for protection.

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INTERLEUKIN-10 PROTECTS MONOCYTES FROM SPONTANEOUS AND INTERFERON- γ -INDUCED PROGRAMMED CELL DEATH IN HIV INFECTION

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Plain Language Summary: Programmed cell death (PCD) of monocytes via apoptosis and/or the autophagy pathways may play an important role in HIV pathogenesis, much like in T lymphocytes. We have shown that spontaneous and Interferon (IFN)- γ -induced monocyte PCD was elevated in HIV+ patients compared to HIV- controls. Interestingly, pre-treatment with Interleukin (IL)-10, a known IFN antagonist, could rescue monocytes from this fate.

Objective: To characterize which PCD pathways are active in monocytes and study the molecular mechanisms that regulates this process.

Methods: Monocyte PCD from HIV- and HIV+ patients was evaluated by flow cytometry using annexin-V/propidium iodide (PI) staining. TRAIL secretion, Caspase 8, LC3-II, STAT, and AKT expression/activation were measured by ELISA, flow cytometry and western blotting, respectively.

Results: IFN- γ enhanced spontaneous PCD and in parallel, TRAIL secretion and caspase 8 activation in primary monocytes. IL-10 exerted inhibitory effects on spontaneous and IFN- γ -induced monocyte PCD as well as TRAIL secretion and caspase 8 activation. Surprisingly, spontaneous and IFN- γ -induced PCD could not be blocked by neutralizing TRAIL and/or Fas death receptors or a general caspase inhibitor, but was abolished with the autophagy inhibitors 3-methyladenine and chloroquine. LC3-II expression, an autophagy marker, was upregulated spontaneously in cultured monocytes, enhanced further upon IFN- γ stimulation but interestingly, was upregulated by IL-10 also. At the level of the molecular mechanism, we found that blocking the Signal Transducer and Activator of Transcription (STAT) or phosphatidylinositol-3-kinase (PI3K) / AKT signaling pathways inhibited PCD in response to IFN- γ , but could also thwart the cytoprotective effects of IL-10. Concordantly, blocking PI3K activation inhibited LC3-II expression in unstimulated and IFN- γ - or IL-10-stimulated monocytes.

Conclusions: Spontaneous and IFN- γ -induced monocyte PCD depended on an intact autophagy pathway, and although accompanied by caspase activation, appeared not to require caspases exclusively. On the other hand, reduced caspase activation, but enhanced autophagy in response to IL-10, lead to monocyte survival. Finally, the opposing effects of both IFN- γ and IL-10 on PCD were dependent on signaling via the Jak/STAT and PI3K pathways.

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THE ONTARIO HARM REDUCTION DISTRIBUTION PROGRAM; ONLY A FIRST STEP IN ENSURING EQUAL ACCESS TO HARM REDUCTION SUPPLIES IN ONTARIO

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Plain Language Summary: Injection drug users (IDUs) are at high risk of contracting hepatitis C, HIV and other infections through sharing drug injection equipment contaminated by the infected blood of another user. The Ontario Harm Reduction Distribution Program (OHRDP) has been distributing, on request and cost-free, new and sterile injection preparation supplies including sterile water, tourniquets, filters, cookers and alcohol swabs to Ontario Needle Exchange Programs (NEPs) since September 2006. Evaluation of the OHRDP revealed the existence of significant political and ideological barriers to distribution independent of funding concerns. These issues must be addressed to ensure universal access to reduce the harms associated with injection drug use.

The Challenge: The Ontario Public Health Branch has acknowledged the importance of comprehensive NEP services in all regions to reduce the spread of HIV and hepatitis C. Despite the availability of cost-free harm reduction resources through the Ontario Harm Reduction Distribution Program (OHRDP), over one-third of Ontario Public Health Units (PHUs) are not distributing all OHRDP supplies.

Our Approach: Eight months post-implementation of the OHRDP, management and staff of Ontario NEPs ordering supplies from the OHRDP participated in an on-line survey documenting their experiences with the program. Questions regarding supply distribution and reasons for non-distribution were asked. Follow-up phone conversations expanded and clarified responses.

Key Findings: Only 33 of 36 regional PHUs in Ontario had operational NEPs. The NEPs associated with two PHUs were too small and understaffed to reach clients in any meaningful way. 93% of NEPs expressed a need for the expansion of the OHRDP to include additional supplies and services and 84% felt safer inhalation equipment should be available. Almost half did not have information on their websites about how to access NEP services if they were required and only five sites were able to distribute any safe inhalation equipment. Among 30 PHUs ordering OHRDP supplies, 35% did not have MOH approval for the distribution of all supplies.

Impact on Policy and Practice: Barriers to the provision and accessibility of harm reduction supplies in Ontario go beyond financial considerations. Even within the public health profession it appears ideologies and political beliefs are effective barriers to equity in access to supplies documented to protect the health of this marginalized population.

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FREE RAPID, POINT-OF-CARE TESTING AT DESIGNATED SITES PROVIDES CHOICE AND MAINTAINS QUALITY OF TESTING DATA

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Plain Language Summary: Rapid, point-of-care HIV testing offers a faster, more convenient service for clients but it can affect the ability to gather data on the total number of people tested. While reactive (preliminary-positive) point-of-care tests would still be reported in those jurisdictions where HIV is reportable, epidemiologists would not have data on the number of people who test negative or on their risk factors.

Objective: To give Ontarians access to a valid, reliable new rapid, point-of-care HIV test and still collect the data required to understand HIV incidence and prevalence, the ministry funds point-of-care testing in 50 sites across the province rather than making point-of-care testing an insured service in all physician office and primary care clinics.

Methods: The program was developed and piloted over 16 months with over 6,000 clients in one of the province's anonymous testing sites. The policies and program resources were developed collaboratively with people living with HIV, sites doing HIV testing, the provincial public health laboratory, public health experts and other stakeholders. They include: pre- and post-test counseling guidelines, policies and procedures for point-of-care testing, training for clinic staff, a quality assurance program, an inventory and distribution system for the point-of-care tests, and an extensive evaluation program.

Results: Community-based testing sites can deliver a high quality point-of-care testing program and collect important epidemiological data. When given the choice, clients are about 8 times more likely to choose point-of-care testing over standard laboratory testing.

Conclusions: The program will continue to be monitored and evaluated for its impact on pre- and post-test counseling, clinic practices, client choice/satisfaction, and testing data. Ontario is also exploring offering point-of-care testing in other sites frequented by people at high risk.

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BENEATH THE MASK: EVALUATION OF A GROUP SUPPORT PROGRAM FOR CHILDREN/YOUTH AFFECTED BY HIV AND AIDS

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Plain Language Summary: The Teresa Group has recently undertaken an evaluation of 8 years of data collected in its “Leading the Way” (LTW) group therapy program. Leading the way provides group support to children/youth that are either aware of, or unaware of their families HIV status. This evaluation is a unique analysis of programming that seeks a holistic understanding of children not only infected but also those who are very much affected by HIV and AIDS.

Objective: The objective of the evaluation was to assess the value of Leading the Way as a group support program for children affected by HIV and AIDS. The questions guiding the evaluation were: What is the impact of LTW on the participating children and youth? Is there a difference in the psychosocial functioning of children who are aware of the HIV infection in themselves or their family versus those who have not been told? To what extent do children in LTW experience heightened levels of anxiety and depression? How can the program be strengthened to better meet the needs of LTW participants? What best practices can be identified from the LTW program?

Methods: Both quantitative and qualitative data were used to evaluate the program. Quantitative data included the participants' completion of the Children's Depression Inventory, the Revised Children's Manifest Anxiety Scale and an evaluation scale designed at LTW. Program retention rates were also calculated. The qualitative data included reports completed by the facilitators on the groups and individual children, and participating children's artwork, songs and answers to open-ended evaluation questions.

Results: Analysis of the data revealed heightened levels of depression and anxiety in the participants. Children in the undisclosed groups were significantly more likely to be over the 50th percentile for depression than children in the disclosed group. The majority of children in both groups demonstrated lower scores on both the anxiety and depression scales after participation in LTW. Results of the qualitative analysis saw three themes emerging. 1. Children's fears about the future 2. Fears of rejection related to HIV and AIDS 3. Families experience stress as parents struggle to cope with living with HIV or AIDS.

Conclusions: Data gathered provided important insight into the challenges facing children affected by or infected with HIV or AIDS. Since these children experience isolation due to the stigma around HIV and AIDS they need long-term support from a consistent source to cope with the issues that they face. This evaluation indicates that the success of LTW stemmed largely from its adaptability and flexibility. Furthermore, the activity-centered approach successfully allowed children to nonverbally express complex and difficult emotions.

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BE REAL: EVALUATION OF ONTARIO'S SOCIAL MARKETING HIV PREVENTION CAMPAIGN FOR GAY MEN

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Plain Language Summary: The BE REAL campaign was developed by the Ontario Gay Men's HIV Prevention Strategy. The campaign was based on HIV research that revealed the complex interplay between safer sexual behaviour and decision-making and underlying social factors. Campaign messages sought to guide and empower men to examine their reasons for sexual risk taking.

Objective: The study was conducted in two stages: an interview-based qualitative investigation of campaign development processes and a survey-based quantitative investigation of campaign outcomes.

Methods: For the process evaluation, 11 key informants were selected for their direct experience developing and implementing the campaign. For the outcome evaluation, 1,495 surveys were collected from gay men throughout Ontario through both an on-site, venue-based survey and web-based electronic survey.

Results: For the process evaluation, interviews revealed two key strengths and two key challenges. The strengths were the campaign development processes themselves, and the focus on prevention factors related to the social determinants of health. Informants praised the inclusiveness of the process - the links between researchers and community workers, the representation of particular ethnic and other population groups, and the cross-community collaboration. The campaign focus allowed participating agencies to address more endemic structural factors that underlie HIV transmission. The challenges were the hurried development of the campaign and the lack of focus in the campaign messages.

For the outcome evaluation, the survey sample was 1,495 participants. Overall campaign awareness was 34%, with higher awareness through venue-based outreach than on-line promotion. Over 70% of those who were aware of the campaign were exposed through three or more types of media and 50% saw the campaign more than ten times. The campaign appeared to be successful in engaging men from a diversity of ethno-racial backgrounds and men engaged in higher risk sexual activities. There was some uncertainty about the campaign message and variation in the messages respondents received from the campaign.

Conclusions: Future campaigns need to take the time required to effectively develop them, and they need to have a clearly articulated target audience and clear focus to the message.

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THE ASSOCIATION BETWEEN VIRAL LOAD MEASUREMENT RATE AND MORTALITY IN ONTARIO

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Plain Language Summary: The number of viral load (VL) measurements per year has been considered as a measure of the quality of care of HIV positive individuals. We compared rates of mortality among OCS participants according to the rate of VL measurement and unexpectedly, found higher rates of VL measurement to be associated with higher mortality, even after controlling for clinical variables.

Objective: To examine the relationship between mortality and the frequency of virologic measurement among HIV-infected patients who were enrolled in the OHTN Cohort Study (OCS) between 1999 and 2007.

Methods: Demographic and clinical data were extracted from the OCS Database. VL measurement rate was categorized as <3 times, 3-4 times and >4 times per year. Cox proportional hazards models were used to evaluate the association between rate of VL measurement and time to death.

Results: 2633 patients taking antiretrovirals who had ≥ 2 VL measurements were included in this study. 85% were male, median age was 48 yr, median years of HIV infection was 18 (IQR 14,22), 60% were men who have had sex with men (MSM), 11% injection drug users (IDU), and 27% reported heterosexual contact. There was a median of 23 (IQR 13 to 31) VL measurements per patient over a median follow-up of 97 months (IQR 50, 103). 300 (11%) patients died during the study period. 696, 936, and 1001 patients had rates of VL measurement of <3, 3-4 and >4 times per year, respectively. Participants in VL groups differed by age, year of exposure to HIV, by MSM/hetero/IDU, by clinical sites, by Hepatitis C status, and by start year of first antiretroviral (all $p < 0.01$). In the multivariate model, covariates associated with time to death were log VL lagged by one year (HR=1.63, $p < .0001$), VL measurement rate less than three time per year (HR=.65, $p = 0.0101$), VL measurement rate 3-4 times per year (HR=.51, $p < .0001$), age (HR=1.44 per decade, $p < .0001$), history of hepatitis C (HR=2.22, $p < .0001$) and baseline CD4 count (HR=0.85 per 100 cells/mm³, $p < .0001$).

Conclusions: Paradoxically, patients with average VL measurement rates of >4 times per year have poorer survival than those whose VL is measured <3 times or 3-4 times per year, even after adjusting for age, VL, CD4 count and hepatitis C status. While our results may be due to residual confounding (for example, by antiretroviral efficacy), they have implications for using VL measurement frequency as an indicator of the quality of HIV care.

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TOXIC EPIDERMAL NECROLYSIS AND STEVENS-JOHNSON SYNDROME IN AN HIV COHORT

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Plain Language Summary: Toxic Epidermal Necrolysis (TEN) and Stevens-Johnson Syndrome (SJS) represent different degrees of a severe, acute mucocutaneous reaction resulting mainly from drugs. TEN affects approximately 0.4 to 1.2 per million people every year. However, the incidence of TEN/SJS in an AIDS population is 1 in 1000 cases. The incidence and prevalence of TEN/SJS in a Canadian HIV population is not available. A search of the OHTN database will be conducted to determine incidence and prevalence.

Objective: To determine the incidence and prevalence of confirmed TEN/SJS in a cohort of Canadian HIV patients who are receiving HIV and HIV-related medications.

Methods: All TEN/SJS cases recorded in the OHTN database between 1995 and present (August 2008) were obtained. The entire OHTN cohort population was eligible for this analysis. Diagnostic criteria for TEN/SJS were established. Clinical experts will confirm the diagnosis and assess causality. Drug exposure and utilization will be documented. Incidence and prevalence rates for the entire cohort and drug specific cohorts (e.g., nevirapine) will be calculated.

Results: A preliminary search of the database was conducted in order to determine whether TEN/SJS cases were recorded in the OHTN database. 16 cases (a combination of Stevens Johnson Syndrome, Erythema Annulare, Erythema Multiforme, Mucocutaneous Ulceration, and Epidermal Necrolysis) over 8 study sites were identified over an approximate 3500 cohort sample size (1 case of TEN/SJS in 250 individuals).

Conclusions: Next steps include confirmation of the diagnosis, determination of drug exposure, drug utilization and causality assessments.

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LABOUR FORCE PARTICIPATION IS INDEPENDENTLY ASSOCIATED WITH PHYSICAL AND MENTAL HEALTH QUALITY OF LIFE IN HIV: FINDINGS FROM THE OHTN COHORT STUDY

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Plain Language Summary: The impact of (un)employment on health is well documented in the general population, but we know very little about the health effects of employment status on people living with HIV. Besides providing income, participation in employment imposes a time structure on our day, compels regular contact with people outside the immediate family, connects people with larger goals that transcend their own, defines people's identity, status and position within society, and enforces regular activity. We found in this study that employment status is strongly associated with health-related quality of life. This suggests that there may be a therapeutic benefit associated with finding and keeping a job.

Issue: What is the relationship between labour force participation and health-related quality of life for people living with HIV/AIDS?

Our Approach: The OHTN Cohort Study (OCS) is a longitudinal observational cohort that collects data on the clinical profile and sociobehavioural determinants of health of people living with HIV in Ontario. A total of 322 PHAs provided baseline data on demographic status (age, gender, sexual orientation, marital status, ethnicity, country of birth), socioeconomic factors (education, employment status, household and personal income), HIV disease markers (recent CD4 counts, viral load, AIDS-defining conditions, time since diagnosis), psychosocial symptom burden (symptom distress, social support, HIV-related stigma, non-medicinal drug use) and HRQOL (SF-36). We performed regression analyses to evaluate the contribution of employment status to the physical and mental health components of quality of life. All models controlled for potential confounders.

Key Findings: In univariate analyses, employment status was significantly associated with both physical and mental health QOL. In the final models, employment status remained significant for both summary scores after controlling for potential confounders [PCS ($\beta=0.44$, 95%CI 0.25 to 0.63) and MCS ($\beta=0.26$, 95%CI 0.02 to 0.50)]. Employment status was also associated with seven out of the eight HRQOL domains with significant regression coefficients, including general health, vitality, social function, role-physical, role-emotional, bodily pain and physical function. In all regression models, employment was associated with better health.

Impact on Policy and Practice: Employment status is strongly associated with health-related quality of life after controlling for potential confounders. This cross-sectional study suggests that there may be a therapeutic benefit associated with participation in the labour market. It may also be the case that better health is a necessary condition to obtain and maintain employment. Alternatively, both selection and causation mechanisms comprise an interactional and reinforcing process.

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HYPERTENSION IN THE OHTN COHORT STUDY (OCS)

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Plain Language Summary: Since the introduction of HAART, the life expectancy of HIV-positive individuals has greatly increased. However, chronic diseases such as hypertension, a risk factor for cardiovascular disease, are becoming increasingly common. This study examined the relationship between hypertension and age, gender, race, and antiretroviral therapy among subjects in the OHTN Cohort Study (OCS). Hypertension increased with age and may be related to female gender and black race. Moreover, hypertension was associated with stavudine, abacavir, and tenofovir exposure after accounting for differences in age, sex, and race.

Objective: To assess the relationship between hypertension and age, gender, race, and antiretroviral therapy.

Methods: Adult subjects, 18 years and older, were enrolled into this study. Population characteristics were summarized for hypertensive status, age, gender, and race. Hypertension was defined as having a diagnosis of high blood pressure or receiving antihypertensive therapy. Statistical analyses, including independent t-tests, Chi-square tests, and multivariable logistic regression were performed to assess for statistical significance ($p \leq 0.05$) in SPSS 14.0.

Results: At the time of analysis, 3350 subjects were enrolled in the study, of which 824 were hypertensive (24.6%). The study population had a mean age (SD) of 49.8 (9.5) years, was predominantly white (76.2%) and male (83.3%). Prevalence of hypertension increased linearly with age ($p < 0.001$) at 10%, 18%, 29%, 41%, and 55% for individuals aged ≤ 40 , 40-49, 50-59, 60-69, and > 70 years respectively. Crude analyses revealed NNRTI exposure in the most recent regimen to be associated with the hypertension ($p < 0.05$). In age, sex, and race adjusted multivariable logistic regression, exposure to NNRTIs and PIs in last regimen increased the odds of developing hypertension; black race became statistically significant after adjustment.

Descriptive and multivariable logistic regression analyses were performed among HAART-naïve subjects and individuals who initiated antiretroviral therapy after OCS enrolment. Among the 2104 subjects, 282 had hypertension (13.4%). Prevalence by age also followed a linear trend ($p < 0.05$). Univariate analyses for any exposure to stavudine, zidovudine, abacavir, tenofovir, and ritonavir revealed significant associations with hypertension ($p < 0.001$). In age, sex, and race adjusted multivariable logistic regression, exposure to stavudine, abacavir, and tenofovir was significantly associated with hypertension; age and female gender was also associated but not race.

Conclusions: One quarter of subjects in the OCS are hypertensive. Hypertension increases with age and follows a linear trend; black race and female gender may also be associated with hypertension. Adjusting for age, sex, and race, exposure to stavudine, abacavir, and tenofovir significantly increases one's risk of developing hypertension.

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DIMINISHED SUSTAINED VIROLOGICAL RESPONSE IN HIV-HCV CO-INFECTION IS NOT A CONSEQUENCE OF INEQUITABLE ACCESS TO HCV CARECurtis Cooper¹; Celine Giordano¹; David Mackie¹

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Plain Language Summary: There are many potential barriers to receiving a complete work-up and achieving success with HCV treatment for those living with HIV-HCV co-infection. We evaluated the burden of these barriers and the effect on treatment uptake and outcome. We conclude that appropriate care is being provided to those living with HIV-HCV.

Objective: HIV, genotype, fibrosis, HCV RNA level and age are well established predictors of sustained virological response (SVR). Language, race, immigration status, mental health illness, history of substance abuse and socioeconomic status are often not considered when evaluating this outcome. Furthermore, these factors may act as barriers to HCV work-up and treatment initiation. This analysis explores the influence of these factors in HCV mono- and HIV-HCV co-infected populations.

Methods: The Ottawa Hospital Viral Hepatitis Program Clinical Database (SPSS 16.0) was utilized to identify new HCV consults between June 2000 and June 2007. Measures of access to HCV care were assessed as a function of HIV co-infection. SVR as a function of the above variables was evaluated and compared between HIV-HCV and HCV by Chi square and t tests. Language barrier was defined as non-English/non-French speaking.

Results: 909 HCV patients (108 HIV+) were evaluated. HIV infection itself did not influence access to work-up (biopsy), treatment initiation or use of supportive treatment adjuvants (erythropoietin) ($p>0.05$ for each):

	HIV-HCV	HCV
Liver Biopsy	50%	51%
Started HCV Therapy	36%	34%
Erythropoietin Use	24%	16%

A history of mental health illness was more often found in HCV mono-infected liver biopsy recipients (56% vs 46%, $p=0.004$) reflecting physician selection bias. Males were more likely to initial therapy than females in HCV mono-infection (57% vs 29%, $p=0.03$) but not HIV-HCV (34% vs 47%, $p=NS$). HCV infected patients with mental health illness were more likely to initiate therapy than those without (38% vs 30%, $p=0.02$). Sex, but not mental health illness, remained significant when controlled for by genotype. Mental health was not found to influence biopsy rates (44% vs 55%, $p=NS$) or treatment initiation (38% vs 53%, $p=NS$) in HIV-HCV. SVR was 54% in HCV and 29% in HIV-HCV ($p=0.003$). Genotype and HIV predicted SVR by multivariate analysis. None of the other above variables influenced SVR.

Conclusions: HCV and HIV-HCV patients received similar access to HCV work-up and care. This access is not influenced by language barrier, race, immigration or socioeconomic status. Sex and mental health illness influence the approach to HCV work-up and treatment but not SVR.

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HIV TREATMENT OUTCOMES DIFFER BY BIOLOGICAL SEX IN HIV-HCV CO-INFECTIONCurtis Cooper¹; Brock Wilkes¹

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Plain Language Summary: HIV-HCV co-infection is common in men and women. We determined the similarities and differences in characteristics and describe HIV drug treatment outcomes. The differences in the reasons HIV-HCV co-infected men and women interrupt HIV drug therapy should be considered when selecting HIV drug treatment in this population.

Objective: The influence of biological sex on HIV antiretroviral treatment outcome is not well described in HIV-HCV co-infection.

Methods: Clinical, immune and virologic therapeutic outcomes of Ottawa Hospital Immunodeficiency Clinic patients treated between January 1996 and June 2008 were evaluated by database analysis (SPSS 16.0). Outcomes and reasons for interruption or change in therapy were compared by biological sex in HIV-HCV co-infected patients initiating a first course of HAART.

Results:

	Male (n=144)	Female (n=39)
Mean Age [yrs (sd)]	38.4 (7.2)	36.6 (7.6)
Mean Baseline CD4 Count [cells/ μ L (sd)]	290 (226)	375 (387)
Mean Baseline HIV RNA Level [copies/ml (sd)]	96433 (162634)	72922 (113227)
Mean ALT [U/L (sd)]	66 (72)	51 (42)
History of Excess Alcohol	37%	36%
History IDU	76%	85%
White	86%	79%
Black	8%	13%
Asian	<1%	0%
Native	5%	8%
Protease Inhibitor-based HAART	69%	77%

The median duration on therapy before interruption or change was longer in males (10 months vs 4 months) [OR 1.40 (0.95, 2.04), $p=0.09$ by Cox regression]. 79% and 77% suppressed HIV RNA below detection within the first 12 months of therapy ($p=NS$). By on-treatment analysis, mean CD4 counts increased to 400 and 413 cells/ μ L at 6 months in males and females ($p=NS$). The primary reasons for therapy interruption in males and females included: Gastrointestinal Intolerance (19% vs 25%, $p=NS$); Poor Adherence (15% vs 22%, $p=NS$); Neuropsychiatric Illness or Complication (5% vs 19%, $p=0.003$); Lost to Follow-Up (13% vs 3%, $p=0.08$). Seven males (5%) and no females discontinued therapy for liver-specific complications. 9% vs 8% ($p=NS$) were on the same HAART regimen at last assessment.

Conclusions: There are subtle differences in the characteristics of male and female HIV-HCV co-infected patients that likely influence HIV treatment decisions. The reasons for treatment interruption and change differ by biological sex. This knowledge should be considered when starting HIV therapy and in efforts to improve treatment outcomes.

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MOLECULAR EPIDEMIOLOGY OF HIV & HCV WITHIN OTTAWA IDU SOCIAL NETWORKS

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Plain Language Summary: Among people who inject drugs (IDUs), the provincial prevalence of HIV and hepatitis C (HCV) remains high but relatively stable with the exception of certain “hot spots” including Ottawa. In order to better understand how HIV and HCV are transmitted among IDUs, we collected dried blood spot specimens (DBS) from participants of an IDU social network study recruited using respondent-driven sampling (RDS). We evaluated molecular relationships between the viruses of HIV and/or HCV positive specimens in the context of IDU social networks and found two thirds of HIV infections were related to at least one other, suggesting recent transmissions, and almost all HIV positive IDUs were also infected with HCV. A better understanding of who gets infected and when will help focus prevention resources to those who need it most

Objective: To evaluate the molecular characteristics of HIV and HCV in the context of Ottawa IDU social networks in order to inform prevention programming.

Methods: IDU were recruited through respondent-driven sampling: 7 IDU ‘seeds’ were recruited and asked to refer three IDU-contacts. Participants completed a structured interview and provided DBS which were tested for HIV and HCV by serology. Positive specimens were sequenced and analyzed using phylogenetic methods (Neighbour-joining as implemented in Mega 4.0). All data and specimens were anonymous and unlinked.

Results: We collected 406 DBS from a total of 407 participants. HCV and HIV prevalence rates were 60.6% and 10.1%, respectively and all but one HIV positive individual were coinfecting with HCV (98% coinfection). HCV genotypes were 66% 1a and 23% 3a, typical of the Canadian IDU population. HIV subtypes were 89% B and 11% C. Thirty-two percent of HCV sequences were present in 24 infection clusters consisting of 2 to 7 sequences whereas 67% of the HIV sequences were present in 7 clusters of 2 to 4. In two pairs of participants, both HIV and HCV were phylogenetically related.

Conclusions: The high degree of HIV clustering suggests many HIV infections are recent and originated from within study networks, whereas a larger proportion of HCV infections may have occurred earlier. Of more concern was the finding that 97% of HIV positives were HCV coinfecting as coinfection leads to more rapid progression of liver disease and complicates the treatment of both diseases. A better understanding of the dynamics of HIV and HCV transmissions within IDU social networks will help better target the limited prevention resources available.

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TREATMENT, CARE AND SUPPORT FOR PEOPLE CO-INFECTED WITH HIV AND HEPATITIS C: A SCOPING REVIEW

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Plain Language Summary: The management of persons living with HIV who are co-infected with Hepatitis C (HCV) is increasingly complex and the complications of HCV co-infection is a leading cause of death in these patients. In this study, we mapped the sources and types of research evidence available. We then assessed the quality of any systematic reviews of the literature and treatment guidelines that we found that were related to the treatment, epidemiology and care/support/prevention for people co-infected with HIV and HCV. We found 9 treatment guidelines (only one was low quality) and 10 systematic reviews (only one was low quality). Despite this, much of the literature does not include injecting drug users or people with mental health issues, which places important limitations on the applicability of the available research evidence about the treatment, care, support and prevention of HIV-HCV co-infection.

Objective: To provide a summary of the existing evidence-base and an inventory of relevant systematic reviews and treatment guidelines that address issues related to the treatment, epidemiology, care, support and prevention of HIV and hepatitis C (HCV) co-infection.

Methods: We searched 7 databases, hand searched 8 journals and contacted key informants to identify literature from 1996-January 2007. Two reviewers independently applied coding criteria and assessed the quality of the included treatment guidelines and systematic reviews using the AGREE and AMSTAR instruments.

Results: Our search strategy yielded 1684 references with 226 meeting the final inclusion criteria. Of the 226 included references, 114 were coded as addressing treatment topics, 49 as epidemiology and 79 as care/support and prevention programming. In addition, we found 9 treatment guidelines with 4 assessed as ‘strongly recommend’ 3 as ‘recommend (with provisos or alterations)’ and 1 as ‘would not recommend’. 10 systematic reviews were also located with 7 assessed as high, 2 as medium and 1 as low quality.

Conclusions: This quality assessed inventory of treatment guidelines and systematic reviews can be used by physicians and service providers to rapidly locate HIV-HCV co-infection research. However, much of the research is based on literature that does not include injecting drug users (IDUs) or people with mental health issues, which limits its scope and applicability to important populations who have a high prevalence of HIV-HCV co-infection. This limitation in the literature highlights the need for additional research with these populations on strategies for effective treatment and services delivery.

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ARE WE MISSING THE MARK ON SEXUAL HEALTH EDUCATION? RESULTS FROM THE TORONTO TEEN SURVEY

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Plain Language Summary: This presentation provides an overview of findings from the Toronto Teen Survey, a community-based research study exploring gaps and barriers to sexual health services for Toronto's diverse youth populations. We discuss what youth identified as gaps and barriers to obtaining sexual health resources and information, and what they would like to see included in future education and health promotion initiatives.

Objective: Recent literature indicates an increase in sexually transmitted infection (STI) rates among youth, and a decrease in youth's knowledge of HIV/STIs. Conscious of the potential for the increased spread of HIV/STIs among youth, the goal of Toronto Teen Survey (TTS) is to develop strategies for improving youth sexual health outcomes by increasing access to appropriate services.

Methods: We adopted a community based participatory research approach and trained our youth advisory committee as peer researchers to conduct survey and sexual health education sessions with their peers. Between December 2006 and August 2007, our youth advisors conducted 90 community workshops and collected 1,216 surveys.

Results: Our sample was diverse in multiple dimensions: 85% were non-white; 33% were born outside of Canada; 17% report a disability; 7% identified as LGB2QQ; 1% as transgender. Overall, 35% percent reported being sexually active (with sexual experience increasing with age). Nevertheless, 68% had never been to a clinic for any sexual health reasons; the number one reported barrier stopping them was fear of being judged or embarrassed by friends. Only 62% said they were getting sexual health information at school; 7% said they weren't getting it anywhere. Youth identified wanting more information on healthy relationships, sexual pleasure & HIV as top priorities for sexual health education.

Conclusions: One size fits all prevention strategies have been ineffective at reaching youth. Attention needs to be focused on looking at the unique vulnerabilities of diverse groups of youth and developing specific strategies that attend to the issues raised.

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IS ANYBODY LISTENING? WHAT BLACK TEENS HAVE TO SAY ABOUT SEX, HIV PREVENTION, AND SEXUAL HEALTH

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Plain Language Summary: Despite the disproportionate number of new HIV infections among Toronto's Black community very little research has been done on the sexual health needs of Black African and Caribbean youth between the ages of 13-17 years of age.

This presentation will focus on the quantitative and qualitative data pertaining to Black youth from the Toronto Teen Survey project. Accounting for thirty-seven percent of the total survey sample (454 youth), Black youth as well as youth service providers were asked to identify the systemic, structural, and social barriers and facilitators they experience in accessing sexual health services and information within their communities.

The Challenge: The goal of the Toronto Teen Survey project is to evaluate the accessibility of sexual health services (i.e. educational and clinical) for youth 13-17 years of age and develop population-specific strategies to improve sexual health outcomes for youth.

Our Approach: Using a community-based participatory research model, 1,216 youth were surveyed in 90 youth-led workshops across the city of Toronto. Thirteen focus groups were conducted with over 80 youth service providers from a variety of sectors. Focus groups were also conducted with male and female youth (separately) where they were asked to provide insight into the survey findings.

Key Findings: From the survey data: 10% of youth identified as Black-African, 4% Black-Canadian, 19% Black-Caribbean. Fifty-seven percent of youth were female, 42% male, less than 1% identified as transgender. Seventy-two percent of Black youth had never visited a clinic for a sexual health issue compared to 68% of the total sample. Some of the sexual health issues raised in both youth and service provider focus groups included prevalent homophobia in Black youth communities, significant gender differences in how sexual activity is perceived, a lack of sex-positive culturally-relevant education, and strong fears around STI/HIV testing.

Impact on Policy and Practice: Sexual health programs and services that do not address the social, structural, and cultural realities of Black youth are not effective in increasing STI/HIV awareness or decreasing risk-taking behaviors. This research has highlighted the need for a multi-faceted approach to be developed that is practical, relevant, and addresses the gaps in sexual health service provision for Black youth.

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"GUYS STILL THINK THAT AN STI TEST MEANS A Q-TIP UP THEIR PENIS": WHAT IS STOPPING YOUNG MEN FROM USING SEXUAL HEALTH SERVICES IN TORONTO?

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Plain Language Summary: This presentation discusses young men surveyed in the Toronto Teen Survey (TTS), a community-based research study of gaps in sexual health services for diverse youth in Toronto. Barriers identified by service providers working with young men, and their recommendations for future health promotion initiatives will be highlighted.

The Challenge: In the TTS, young men reported having participated in higher rates of high risk sexual activities (anal or vaginal intercourse) than young women. Despite these higher levels of risk taking behaviours, the majority of young men have not visited a clinic for sexual health reasons yet many indicate that there is nothing stopping them from attending. This presentation looks to service providers to find out why young men do not see sexual health as a priority and how to improve their access to services and information.

Our Approach: We presented the results from the TTS in 13 focus groups with 90 service providers from 55 agencies and asked the service providers if the findings were consistent with their work. We also asked for recommendations to improve services and access for youth. Data mentions of young men were pulled out to analyze this specific group of youth.

Key Findings: Through focus group discussions, the main barrier service providers identified for young men was fear: fear of STI testing procedures, fear of positive STI diagnoses and fear of being judged or embarrassed by friends. Service providers also observed that young men are often passive in dealing with their sexual health and will only seek help upon immediate need. A number of possible reasons for this phenomenon were identified, including a machismo view that men must be tough, and a general reluctance among young men to talk about issues of sexual health. Service providers also indicated barriers for their organizations including the difficulties recruiting young men for workshops and maintaining their attention.

Impact on Policy and Practice: Young men require targeted sexual health education programs and services to meet their needs. Sexual health education must go beyond the biomedical and teach young men about healthy relationships. Attention needs to be directed towards creative ways of attracting young men to services and removing the stigma associated with their use.

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WHAT, WHERE, WHO AND HOW? WHAT DO TORONTO NEWCOMER YOUTH HAVE TO SAY ABOUT SEXUAL HEALTH EDUCATION

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Plain Language Summary: Missing severely from the public discourse on sex education are perspectives of youth themselves particularly those of young girls, LGBT2Q youth, street-involved and newcomer youth (immigrants who have lived in Canada for less than five years). Although one in six youth aged 15-24 in Toronto is a newcomer we know virtually nothing about which sexual health topics these youth would like to learn about and from whom and in what setting they would like to receive them. In order to fill this gap, this paper provides an overview of the results of a community based project, Toronto Teen Survey, while focusing solely on data which relate to newcomer youth.

Objective: To outline the most important sexual health topics newcomer youth would like to learn about; to discuss from whom they like to learn those topics; and to discuss the factors that would help them access the sexual health information that they need.

Methods: We adopted a community based participatory research approach and trained our youth advisory committee as peer researchers to conduct survey and sexual health education sessions with their peers. Between December 2006 and August 2007, our youth advisers conducted 90 community workshops and collected 1,216 surveys. Our sample consisted of 138 newcomers.

Results: The newcomer group consisted of 60% Asian, 23% Black, 3% white, 5.8 % multiracial, and 6% 'other'. 18% said they have never received sexual health classes. Youth identified information on healthy relationships, HIV/AIDS, and pregnancy as top priorities for sexual health education. They reported wanting to receive information from professionals, friends, and mass media. They identified parent education on healthy sexualities as one of the top factors that would help them get the information they want.

Conclusions: The perspective of newcomer youths must be taken into consideration for development of effective and culturally sensitive sexual education material. Given the heterogeneity of newcomers to Canada, this task is very complex. However, failure to recognize their concerns will contradict the notion that effective sexual education is a democratic right.

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WHO IS SERVING LGB2Q YOUTH: HAS ANYTHING CHANGED FOR THE 'WILL AND GRACE' GENERATION?

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Plain Language Summary: The Toronto Teen Survey is a community-based research project exploring gaps and barriers to sexual health services for Toronto's diverse youth populations. This presentation discusses the LGB2Q youth surveyed in the TTS as well as findings from focus groups held with service providers.

Objective: LGB2Q youth have heightened vulnerability to HIV due to a number of systemic factors including homophobia, family violence, peer harassment in schools, lack of appropriate role models and service access barriers. This presentation provides an analysis of the LGB2Q sample from the Toronto Teen Survey, highlighting service barriers from their perspectives as well as those of service providers'.

Methods: Adopting an innovative community based research (CBR) approach, we trained a Youth Advisory Committee as peer researchers to conduct survey and sexual health education sessions with peers across Toronto. Between December 2006 and August 2007, our youth advisors conducted 90 community workshops and collected 1,216 surveys. Subsequently, we conducted 13 focus groups with 90 service providers from 55 agencies in Toronto to help deepen our understanding of the quantitative findings and to formulate practice and policy responses.

Results: Of 1,216 youth 47 (4%) identified as LGB2Q and 37 (3.3%) as 'questioning'. Questioning youth tended to be younger than the average age of the sample and were more likely to identify as non-white, while LGB2Q-identified youth were older and more likely to identify as White. LGB2Q youth were also more likely to report engaging in higher risk (penetrative) sexual activities and many reported a history of pregnancy. Despite such risk, LGB2Q youth were less interested in learning about HIV than other groups of youth and were most interested in learning about sexual pleasure, healthy relationships and sexual orientation issues. LGB2Q youth identified services which are not friendly towards youth and a fear of being judged or embarrassed by staff, as their two main barriers to accessing a clinic. Service providers identified a number of systemic barriers to implementing appropriate programming for these youth, for example, working through 'hidden referral networks' of LGB2Q-friendly staff in other agencies to meet the needs of their clients. In addition, many felt unsafe about challenging homophobia in their own agencies.

Conclusions: Our data show that LGB2Q youth continue to be an important group to target with HIV prevention messaging but that current strategies need to be modified to meet their needs. Furthermore, effective prevention programming rests upon addressing broader systemic and structural barriers to sexual health services.

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DISCRIMINATING PARTIERS: HOW GAY AND BISEXUAL MEN FROM RACIALIZED COMMUNITIES IN TORONTO REDUCE HARMS ASSOCIATED WITH PARTY DRUGS

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Plain Language Summary: The Party Drugs study among gay men in the Toronto dance club scene provided information that supports health promotion approaches related to drug use. This analysis involved a subset of 47 gay and bisexual men from marginalized ethno-cultural groups and examined self-described harms associated with party drug use and practices employed to reduce these harms. Participants described a variety of harms; some of these varied significantly from the harms commonly targeted by harm reduction programs. Harm reduction involved practical choices that fit the details of regular life. Harm reduction programs should empower substance users vulnerable to the spread of HIV to live healthy positive lives.

The Challenge: Vulnerability to HIV transmission can be exacerbated by a variety of circumstances; substance use can be involved in some of the processes that make individuals more vulnerable to the spread of HIV. Current knowledge about harm reduction practices employed by ethno-cultural gay and bisexual men who are vulnerable to HIV is limited.

Our Approach: From the 74 gay men interviewed for the Party Drugs study in 2003, we analyzed the narratives of South Asian, East and Southeast Asian, Caribbean, Latino and Aboriginal gay men (n = 47). Respondents had (1) gone to a gay dance club in Toronto in the last three months; (2) used party drugs (i.e. ecstasy, ketamine, GHB, crystal meth, etc.) in the last three months; and (3) identified with an ethno-racial background other than White/European. A thematic analysis summarized key substance use harm reduction strategies employed by participants.

Key Findings: Several self-directed harm reduction strategies were described including: rationing/limiting their substance use, following a set of guidelines about which drug combinations to consume, and evaluating drug quality. These strategies revealed participants' concerns to avoid a variety of self-identified harms associated with using party drugs. This orientation towards reducing harm often resulted in prosaic activities based on knowledge garnered through previous experience or social networks/peers.

Impact on Policy and Practice: These findings show that gay and bisexual men from diverse ethno-cultural groups define harms and useful practices to reduce these harms more broadly than current harm reduction programming. Harm reduction approaches should focus on well-being and other methods to empower individuals to apply health promotion messaging to their daily lives, including their substance use.

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HIGHER RATES OF ENGAGEMENT IN THE HIV- AND HCV-RELATED PRACTICE OF MULTI-PERSON USE OF INJECTION AND DRUG PREPARATION EQUIPMENT SIGNIFICANTLY ASSOCIATED WITH LIMITED OR NON-IMPLEMENTATION OF ONTARIO'S HARM REDUCTION DISTRIBUTION PROGRAM.

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Plain Language Summary: People who inject drugs (IDUs) can acquire HIV and HCV infection through sharing equipment used to prepare veins and drugs prior to injection. In this study we compared engagement in this practice among IDUs who had established access to new and sterile drug and injection preparation equipment at their local NEP through implementation of the Ontario Harm Reduction Distribution Program (OHRDP) with those whose NEP was either not implementing the OHRDP or had only recently done so. In regions in which the OHRDP was established, significantly lower rates of sharing cookers, water, filters and tourniquets were documented, suggesting that resistance to OHRDP implementation needs to be overcome.

Objective: To examine the impact of the availability of drug and injection preparation equipment through the OHRDP on the HIV- and HCV-related practice of the multi-person use of these materials among IDUs from 26 Ontario cities.

Methods: 1,622 active IDUs from 27 Public Health Regions completed structured interviews between September 2006 and August 2007. Participants were assigned to two groups: the ACC group whose local NEP had been distributing each individual item of equipment for more than two months at the time of their interview and the NOACC group whose local NEP was either not distributing the individual item at the time of interview or had been distributing the item for less than two months. Chi-square tests determined differences in sharing practices between the two groups.

Results: 26% of participants in the ACC group and 37% in the NOACC group reported multi-person use of cookers (P<0.000); 21% in the ACC group and 27% in the NOACC group reported multi-person use of water (P<0.05); 13% in the ACC group and 20% in the NOACC group reported multi-person use of filters (P<0.000); and 21% in the ACC group and 27% of participants in the NOACC group reported multi-person use of tourniquets (P<0.01).

Conclusions: In regions in which the OHRDP was established, significantly lower reported rates of engagement in the HIV- and HCV-related risk behaviours of sharing cookers, water, filters and tourniquets were documented. However, the influence of individual MOHs to resist distribution of these items in the context of epidemiologic and virologic evidence to support distribution, in the context of cost-free resources through the OHRDP to support distribution and in the context of worrisome levels of HCV and HIV prevalence among people in Ontario who inject drugs needs to be overcome.

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"THERE IS NO EXCUSE FOR THIS WANTON, RECKLESS, SELF-INDULGENT BEHAVIOR" A CRITICAL ANALYSIS OF MEDIA REPRESENTATION OF THE CRIMINALIZATION OF HIV NONDISCLOSURE IN CANADA.

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Plain Language Summary: This presentation focuses on the use of discourse analysis as a research tool that can inform social movement responses to the criminalization of HIV nondisclosure. The presentation does two things. First, it summarizes the findings of an analysis of newspaper articles of Canadian court cases involving HIV non-disclosure over the past 20 years. Second, it describes the ongoing use of that analysis to inform the advocacy work of the Ontario Working Group on Criminal Law and HIV Exposure.

The Challenge: IAS 2008 identified critical responses to criminalization of HIV transmission/exposure as a key area of research and advocacy. This presentation contributes to a small but growing body of work on media representations of criminalization, emphasizing how newspaper coverage reinforces a criminal law framing of nondisclosure and oversimplified, morally-charged distinctions between "good" and "bad" PLHIV.

Our Approach: Using an online search engine, we collected a sample of 277 news articles for the twenty-year period 1987-2008. Search terms HIV and crime* were used to find articles linking HIV and crime, criminal, criminalization, etc. To ensure adequate coverage of key court cases, findings were compared with records from the Canadian HIV/AIDS Legal Network.

Our approach to discourse analysis is informed by the work of Michel Foucault, Dorothy Smith and the critical discourse analysis school. Our analysis treats media representations as active constructions of social reality with potentially damaging political effects. In making sense of newspaper coverage we direct attention to overarching language structures called discourses, as well as to narrative form, processes of subjectification and omission.

Key Findings: The findings from our analysis of newspaper coverage address four issues:

- 1) Historical shifts in the focus of media reportage on HIV nondisclosure over the period of analysis.
- 2) The differing forms of subjectification of PLHIV as claimants or defendants.
- 3) The presence of countervailing activist/ally perspectives.
- 4) Key absences in how nondisclosure is framed.

Impact on Policy and Practice: We discuss how the findings of this analysis played a part in developing the mission statement and media activities of the Ontario Working Group on Criminal Law and HIV Exposure.

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THE CANADIAN TREATMENT ACTION COUNCIL (CTAC): ADVOCACY FOR ACCESS TO SOLID ORGAN TRANSPLANTS FOR PLHIV, PLHIV/HCV AND PLHIV/HBV AND A CANADIAN CENTRE OF EXCELLENCE FOR ORGAN TRANSPLANTATION.

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Plain Language Summary: Within Canada, while Solid Organ Transplants (SOT) for PLHIV or co-infected with hepatitis are not explicitly exempted, it is virtually impossible to access life-giving organs. With the advent of HAART, PLHIV, PLHIV/HCV and PLHIV/HBV are living longer, healthier lives. The need for access to SOT is paramount and increasing. There is no ethical or medical justification to withhold organs from patients whose HIV is well controlled. Access must no longer be denied based on fear, marginalization, misinformation or lack of infrastructure.

The Challenge: The challenge to SOT for PLHIV or co-infected with hepatitis is in integrating clinical and community care which at present is lacking in policy, program and support services infrastructure. There are access and treatment differentials between the provinces. There are no federal government policies that guide Transplant Centers or specialists or the provinces for the provision of care and treatment for SOT for PLHIV, PLHIV/HCV and PLHIV/HBV.

Our Approach: The Canadian Treatment Action Council and members of the CTAC HCV/HIV WG have started a CTAC SOT WG to respond to both SOT access issues and to recommend a Canadian Centre of Excellence for Organ Transplantation. The group reviewed literature to evaluate barriers to access and the current infrastructure that does not support equal access to SOT for PLHIV, PLHIV/HCV and PLHIV/HBV.

Strategies of the SOT WG have focused on communications for policy change, with press conferences, interviews and filming by individuals in need of SOT, physicians and advocates to shatter some of the myths and misconceptions, to stress the need for immediacy and change to policies. The press conference given by CTAC at the International AIDS Conference 2008 in Mexico City has helped to bring world attention to issues of access barriers and the need for a Canadian Centre of Excellence for Organ Transplantation.

Key Findings: Despite positive results from other countries that perform SOT in the presence of HIV and co-infection, the Canadian transplant community still sees HIV/AIDS and Co-infection as grounds to withhold transplantation. Reasons given to justify denying transplantation in Canada include: Surgeon reluctance, complexity of HIV and anti-transplant drugs, transplantation efficacy in these diseases and insufficient patient demand. These arguments are not supported by clinical data or patient outcomes and add to existing stigma and discrimination that surrounds HIV/AIDS and co-infection.

Impact on Policy and Practice: CTAC is consulting with a number of hospitals across the country to determine the needs, interest and potential locations for a Canadian Centre of Excellence for Organ Transplantation.

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IS THERE AN ASSOCIATION BETWEEN FOOD SECURITY AND INJECTION-RELATED HIV RISK?

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Plain Language Summary: Little is known about food security (i.e., having enough money to buy food) among injection drug users (IDUs) and if it correlates with injection risk behaviours. Our data show that food security is correlated with HIV risk behaviour.

The Challenge: Food insecurity means not having access to enough food for active, healthy living because of a lack of money or other resources. We ask an important question for needle exchange programs (NEPs): is food security associated with HIV risk behaviours (e.g., re-use of needles, injection water, cookers and filters)?

Our Approach: We interviewed 145 current injectors in London, Ontario and asked about injection practices, experience of food and housing security, service use, HIV and hepatitis C (HCV) status and physical and mental health status. Using logistic regression, we examined if food security is independently associated with re-use of needles, injection water, cookers and filters.

Key Findings: In the past 6 months, 52% reported that on a daily or weekly basis they did not have enough to eat because of a lack of money; and 60% reported that on a daily or weekly basis they did not eat the quality or quantity of food they wanted because of a lack of money. Fully 65% reported on a daily/weekly basis not eating or drinking enough because of an extended drug 'run'. On a daily/weekly basis, 33% reported using a food bank. The percentages of participants reporting re-using someone else's equipment were 21% re-used a needle, 19% re-used water and 37.3% re-used a cooker. The odds of re-using needles were increased for those reporting food insecurity (OR=2.7), injecting outdoors (OR=3.7) and HCV positive status (OR=2.9) and reduced for those under age 25 (OR=0.87). For sharing water, the odds were increased for those reporting food insecurity (OR=2.6), HCV positive status (OR=3.2) and opiate injecting (OR=7.0). The odds for cooker re-use were increased for IDUs reporting food insecurity (OR=1.9), injecting outdoors (OR=2.7) and HCV positive status (OR=2.25). For filter re-use, the odds were increased for those reporting food insecurity (OR=3.1), injecting outdoors (OR=6.7) and HCV positive status (OR=3.8).

Impact on Policy and Practice: Our findings demonstrate that IDUs have frequent experiences of food insecurity. These experiences are strongly correlated with sharing of injection-related equipment and may increase the likelihood of HIV transmission. Addressing food-related needs among IDUs will require stronger ties with social services, food banks and shelters and perhaps needing to address issues of stigma to ensure IDUs have access to these programs.

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HETEROSEXUAL-IDENTIFIED WOMEN WHO HAVE SEX WITH WOMEN HAVE AN HIV RISK PROFILE DISTINCT FROM LESBIAN, BISEXUAL OR OTHER HETEROSEXUAL WOMEN

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Plain Language Summary: Despite knowledge that some people engage in same-sex sexuality while maintaining a heterosexual identity, this has rarely been studied in women. Results from this study indicate that heterosexual women with female sex partners have a unique HIV risk profile.

The Challenge: To determine whether same-sex sexual behaviour in heterosexual women was an indicator of increased risk for HIV infection.

Our Approach: As no Canadian population data exist that provide information needed for these analyses, 2002 U.S. National Survey of Family Growth data (n=5844) were used to compare heterosexual women age 20-44 who reported one or more past-year female sex partners (hetWSW) to those with only male partners (hetWSM), to lesbians and to bisexuals. Groups were compared on sexual risk behaviours and substance use.

Key Findings: Most hetWSW had only one female sex partner in their lifetime, and 98% had past-year male partners. HetWSW had more male partners than hetWSM over the past year and lifetime. Median lifetime male partners were 10 for hetWSW vs. 4 for hetWSM, 1 for lesbians and 6 for bisexuals. Similarly to bisexuals, but differing from lesbians and hetWSM, 66% of hetWSW had ever had anal sex and 5% had a bisexual male partner in the past year. While results for hetWSW were most similar to bisexual women, there were distinct differences. HetWSW were significantly more likely than any other group to have had a non-monogamous male partner (40%) and to have engaged in sex while high (69%) during the past year. HetWSW reported high levels of substance use. They were about twice as likely as hetWSM to smoke tobacco (46%) or drink alcohol (49%) regularly, and three times as likely to binge drink (34%). Over the past year they were five times as likely to use marijuana (58%), and nine times as likely to use cocaine (19%). While estimates of use were highest for hetWSW for all substances, they did not differ significantly from bisexuals on tobacco use or from lesbians or bisexuals on alcohol use. Results suggest same-sex behavior in heterosexual women is a marker for an HIV risk profile distinct from that of bisexual, lesbian or other heterosexual women.

Impact on Policy and Practice: Same-sex sexual behavior in heterosexual women serves as a risk marker for higher sexual risk and substance use. In clinical care and prevention settings this information may help identify women who should be screened for these issues, so that their education, prevention and health care needs can be appropriately met.

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CONCEPTION OF A CBR PROJECT ON PREGNANCY IN STREET-INVOLVED YOUNG WOMEN: DEVELOPMENT OF A STRONG SERVICE PROVIDER-RESEARCHER PARTNERSHIP.

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Plain Language Summary: We have forged a CBR partnership between street-involved young women, service providers, a doctoral student and academics. In this presentation we reflect upon the beginnings of our project, describing the relationship-building process from the perspectives of two service providers and a doctoral student. We discuss elements that enhanced the relationship-building process.

The Challenge: This CBR project brings together academics from St. Michael's Hospital and the University of Calgary, service providers from Evergreen Centre for Street Youth and Youthlink Inner City, and street-involved young women living in Toronto who have experiences with pregnancy. The partnership will perform qualitative in-depth interviews to explore the context of street-involved young women's lives at the time of conception. The young women will express their experiences with pregnancy through creative means as part of the knowledge translation plan. This presentation discusses project genesis and features that contributed to a robust partnership between the doctoral student and Evergreen.

Our Approach: The doctoral student began by interviewing service providers from street-youth agencies to determine the issues in the community that could benefit from a CBR research project. The doctoral student began volunteering with Evergreen shortly after meeting with the staff members who would later become community partners in the project. The relationship between the doctoral student and Evergreen Centre for Street Youth developed over the one year prior to submission of an operating grant to fund the project.

Key Findings: This presentation describes the features that contributed to a strong partnership in the early phases of a CBR project, and the development of a project which reflects a melding of service providers and researcher interests. These features include personal characteristics such as common research interests, reliability, and empathy, and features that developed because of the extended contact between the service providers and the doctoral student through volunteering, such as open communication and trust. Because the relationship-building began more than a year prior to the submission of the operating grant, the service providers had ample time to observe the doctoral student, determine whether they were interested in pursuing a research project with her, and decide upon the type of project they wanted to do. Furthermore, there was enough time for the service providers to have real input on all stages of the research project, from conception through proposal writing, ethics approval and data collection.

Impact on Policy and Practice: A combination of personal characteristics (both researcher and service provider) and extended contact through volunteering proved helpful in developing a strong service provider-researcher partnership, and a CBR project that reflects community interests.

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THE PRESENCE OF ABSENCE: THE EFFECT OF HIV SERO-STATUS ON THE BEREAVEMENT EXPERIENCES OF LONG-TERM SURVIVORS OF MULTIPLE AIDS-RELATED LOSSES

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Plain Language Summary: This research examines the bereavement experiences of HIV-infected and HIV-affected loss survivors within AIDS-impacted communities in Ontario. Advances in anti-retroviral therapies have resulted in a prolonged life for many infected with HIV. However, attending this prolongation of life is a series of psychosocial concerns. The emerging group of long-term survivors is exploring uncharted territory, including the navigation of new attachment and loss terrain. Accompanying this HIV+ population is a corresponding group, the network of HIV- individuals who have lived through waves of dying friends and experienced catastrophic losses in their community-of-meaning. Their journey with attachment and loss is also largely uncharted.

The Challenge: What are the bereavement experiences of HIV + and HIV- long term survivors of AIDS-related losses? How does HIV sero-status affect the bereavement experiences of long term survivors? How can the bereavement experiences of HIV+ and HIV- long term survivors inform capacity building in the Ontario AIDS movement?

Our Approach: This research used a qualitative, participatory, action-research approach. A mixed sero-status team first conducted in-depth 1-1 interviews with 12 HIV+ and 15 HIV- individuals, followed by 2 dialogue groups, one for HIV+ bereaved and the other for HIV- negative. Data was themed from the interviews and groups. We then invited all 27 participants to make up a 3rd blended group that reviewed, interpreted, analyzed the data from both groups and collaborated in the development of research conclusions and recommendations.

Key Findings: Both HIV+ and HIV- participants articulate six categories of loss: confrontation with death; loss of the assumptive world; survivor syndrome; identity and belonging; making meaning; rebuilding community. Bereavement experiences are not conceptualized in a static, linear, one-dimensional manner, but rather as a dynamic, multidimensional process of "leaving normal". This study notes important distinctions between HIV+ and HIV- individuals. Survivors' experiences also point to creative strategies of resiliency and coping.

Impact on Policy and Practice: There is a lack of awareness of the complexity and dimensions of AIDS related bereavement experienced by long term survivors, accompanied by a backlog of grief and loss in AIDS-affected communities. Community-based bereavement interventions that would adequately meet the challenge of multiple AIDS-related losses must reflect a multidimensional and integrated response. Effective bereavement responses cannot be segmented into discrete activities set apart from community life, but are most successful when they are integrated into community life. This study proposes strategies that relocate the emphasis of bereavement work from "personal process" to "community possibilities".

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COLLABORATION AND CROSS TRAINING BETWEEN HEALTH AND CORRECTIONAL SERVICES LEADS TO MORE INTEGRATED SERVICES FOR PHAS IN PRISON

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Plain Language Summary: People in prison in Ontario (Canada) are significantly more likely than the general population to have HIV and/or Hep C (Calzavara et al, 2007). According to the 12 Ontario ASOs that serve PHA prisoners, clients do not have the same access to care and support in prison as they do in the community, and there are few links between health staff in correctional facilities and community workers.

Objective: The Ontario Ministries of Health and Long-Term Care and Community Safety and Correctional Services are collaborating to build stronger working relationships between prison nurses and community support workers and improve the quality and consistency of HIV care, support and prevention services for prisoners.

Methods: Over a period of 18 months, the two ministries organized cross-training workshops for prison nurses to learn about ASO services and ASO workers to learn about diet, discharge planning, and other prison services. Approximately 125 representatives from both sectors attended a provincial conference to discuss issues and develop strategies to improve and integrate services. With advice from the community, the two ministries developed a brochure given to all inmates on intake. To avoid stigma and discrimination in prison, the brochure integrates HIV, STI and Hep C prevention and testing information with other health promotion information.

Results: Ongoing communication and cross training give ASOs a better understanding of the services available to PHAs in prison, and correctional facilities a better understanding of community resources. ASOs report better working relationships with health services in prison, and more integrated services for prisoners.

Conclusions: The two sectors will continue to support cross training, communication and collaboration. They are also exploring the potential to offer prisoners other options for HIV testing, such as anonymous testing done by community-based public health nurses.

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DEVELOPING THE CAPACITY OF HUMAN RESOURCES PROFESSIONALS TO SUPPORT PEOPLE LIVING WITH HIV AND OTHER EPISODIC DISABILITIES IN THE WORKFORCE

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Plain Language Summary: There remain significant challenges to obtaining and maintaining employment for people living with HIV and other episodic disabilities. The Canadian Working Group on HIV and Rehabilitation (CWGHR) has evaluated the utility of an online training course for Human Resources professionals to increase knowledge on the nature of episodic disabilities and their impact on the employment environment. This presentation will discuss the outcomes of this evaluation of Human Resources professionals during a piloting process in 2008 and also engage audience participation in examining other mechanisms to assist people living with HIV and obtaining and sustaining employment.

The Challenge: In 2006 CWHGR conducted a national survey of certified Human Resources professionals which concluded that level of knowledge of HIV and other episodic disabilities; impacts on the work environment; and how to successfully accommodate people with episodic disabilities is limited. HR professionals expressed that they are challenged by these issues and are looking for additional information and supports.

Our Approach: CWGHR has developed an introductory course on episodic disabilities and their impact on employment. This online introductory course discusses the concepts of episodic disabilities, the importance of issues surrounding employment and episodic disabilities, benefits of accommodation, understanding federal and provincial accommodation legislation and introduces accommodation practices. The course also asks participants to reflect on policy within their respective organizations that may need revision. The course was piloted with a group of 23 Certified Human Resources professionals in Ontario to determine if the course content and the online platform facilitated learning about the challenges of episodic disabilities and employment.

Key Findings: HR professionals reported that the course was of benefit in introducing the concept of an episodic disability. Participants found the topic area of relevance to their practice. The concepts are new to many and HR professionals are looking to become proficient in supporting people with HIV and other episodic disabilities in the workplace. Successive levels of content should be developed in the areas of accommodation and workplace and public policy intervention.

Impact on Policy and Practice: Several participants reported initiating discussions with senior executives at their respective organizations on how to better maintain people with episodic disabilities in their places of employment. The majority of participants indicated that their workplace policies require improvement to better support employees with HIV and other episodic disabilities and that episodic disability policy templates should be developed for employers, insurers and the public sector. This presentation will engage the audience in discussing further these employment support and policy needs.

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EVIDENCE-INFORMED CRITERIA FOR ASSESSING MEDICAL INADMISSIBILITY IN CANADIAN IMMIGRATION LAW

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Plain Language Summary: The current cost threshold applied by Citizenship and Immigration Canada (CIC) to assess whether an applicant is likely to pose “excessive demand” on Canadian health or social services is too low. This project derives a compelling statistical definition of excessive demand and applies this threshold to persons with HIV/AIDS seeking admission to Canada.

The Challenge: The Immigration and Refugee Protection Act (IRPA) outlines the conditions under which individuals may be denied admission to Canada. Section 38(1) stipulates that applications for residence may be rejected if the applicant’s health is likely to generate “excessive demand” on Canadian health or social services.

Our Approach: There are five components to this project:

1. We review the application of Canadian immigration law as it pertains to persons with HIV/AIDS in the context of international HIV-related mobility restrictions;
2. We review and assess the current threshold used to determine excessive demand on Canadian health or social services;
3. We synthesize the clinical, epidemiological and economic literatures regarding the expected burden placed on health or social services by persons with HIV/AIDS;
4. We derive estimates of the economic burden associated with a new immigrant with HIV/AIDS over a 5-year, 10-year and lifetime horizon after stratifying for their state of health, sex, and age at admission;
5. Estimates of economic burden are compared to the excessive demand threshold to yield evidence-informed criteria for assessing medical inadmissibility.

Key Findings: Three substantive findings:

1. The current cost threshold used by CIC in assessing whether an applicant is likely to pose “excessive” demand (C\$4,867.40/year) is too low. A statistically more appropriate threshold is three-fold greater at C\$14,581.43/year.
2. There is a close relationship between disease progression (measured by CD4+ cell counts) and health care costs, with annual costs of about C\$12,000 for CD4+>200/ μ L, C\$18,000 for CD4+ from 51-200/ μ L, and C\$30,000 for CD4+<50/ μ L.
3. Application of these cost estimates to the revised cost threshold for inadmissibility indicates that classification depends on individual characteristics, including age, sex and health status, as well as on the time horizon over which each applicant’s projected demand is assessed. “Excessive” demand is more likely to occur for applicants with low CD4+ cell counts and a shorter time horizon for assessment (i.e., 5-years versus their lifetime). Women and younger applicants are slightly more likely to be deemed inadmissible than men and older immigration applicants.

Impact on Policy and Practice: CIC should develop more evidence-informed policy and admit to Canada some applicants otherwise denied admission based on current policy.

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ACADEMIC/COMMUNITY COLLABORATION TO ADVANCE EVIDENCE-INFORMED IMMIGRATION POLICY ON HIV: THE MEDICAL INADMISSIBILITY STUDY EXPERIENCE

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Plain Language Summary: Current Canadian policy on medical inadmissibility of new immigrants has profound impact on people living with HIV/AIDS. A team made up of academic and community partners conducted a study to examine the evidence that may inform this policy. To ensure relevance and accountability of our study to the communities it affects, different mechanisms are developed to ensure effective stakeholder input. Our experience shows that the collaborative experience strengthens the study’s design and can increase its impact.

The Challenge: Since 2002, all applicants for permanent residence in Canada are required to undergo mandatory HIV testing. People whose health condition is likely to generate “excessive demand” on Canadian health and social services may be rejected based on a government set threshold. A team made up of academic and community partners developed a research study to examine Canadian immigration policy and existing clinical, epidemiological and economic literature to yield evidence-informed criteria for assessing medical inadmissibility. To ensure stakeholder accountability, the team developed several systemic measures to engage the target communities in the research process.

Our Approach: Key stakeholder groups we seek to involve include immigration applicants living with HIV/AIDS, service-providers from legal, settlement and HIV/AIDS service sectors, as well as legal and public policy experts on human rights, immigration and refugee issues, HIV/AIDS and other disabilities. We involved these diverse stakeholders through several mechanisms: As members of the research team; as members of a community reference advisory body; through community consultation meetings; and as collaborative knowledge-transfer partners

Key Findings: Academic community partnership strengthens both the design and impact of the study. Community partners on the research team helped ensure that research questions and findings are relevant to communities affected and that processes are in place to facilitate meaningful target community involvement. The community consultation process ensured that the communities affected by the policy outcomes understood the rationale and objectives of the study, and informed the research team on critical questions to be asked of key stakeholders. The community reference group provided important insight in the analysis of preliminary data and assisted the research team in the development of a knowledge transfer plan. Community partners are engaged to co-sponsor dissemination forums to maximize dissemination of research knowledge and its utilization by different stakeholders.

Impact on Policy and Practice: The study generated critical evidence to inform policies affecting newcomers applying for permanent residence in Canada. The community/academic partnerships developed for the study will enable more meaningful and impactful dissemination and utilization of research findings by all stakeholders of interest.

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INVOLVING TARGET COMMUNITIES OF RESEARCH TO BE THE LEADERS IN EFFECTING CHANGES: IMMIGRANT/REFUGEE PHAS AS RESEARCH KNOWLEDGE TRANSFER EXCHANGE AMBASSADORS

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Plain Language Summary: The ultimate goal of a community-based research is to increase the ability of stakeholders to access and use research findings to address issues facing their communities. This knowledge transfer and exchange project aims to ensure that the target communities affected by the research plays a leadership role in designing and implementing knowledge dissemination strategies.

The Challenge: To build capacity of community members in order to champion change through research findings dissemination activities

Our Approach: The project consists of 4 stages:

1. Engage IRN-PHA peer research assistants from five ethno-racial communities (East and Southeast Asian, South Asian, African, Caribbean, Spanish-speaking) to recruit their peers to become knowledge ambassadors.
2. Conduct capacity building activities to facilitate the IRN-PHA KTEAs to develop the necessary skills to design culturally appropriate knowledge dissemination tools. Key training areas include: principles and theories of knowledge transfer exchange, different types of KTE tools, skills in developing audience specific messages and KTE tools, and skills in public presentation.
3. Deploy the IRN-PHA knowledge ambassadors in knowledge transfer exchange activities to different target audiences in order to effect needed policy and program changes
4. Evaluate project experience, impact and lessons learnt

Key Findings: Participatory training processes are effective in enabling peer research assistants and knowledge transfer exchange ambassadors to develop deeper understanding of the research findings and recommendations and foster sense of commitment and leadership in their dissemination. Participants indicated that workshops are more effective when they are actively involved in their planning, facilitation and evaluation; they report that they learn better in small groups and when team work instructions are clear to everybody. The use of real life examples throughout workshop yielded positive outcomes. Having the participants working in small groups to develop audience specific knowledge dissemination strategies increased the connectedness of the knowledge ambassadors to their respective communities and increase their motivation and confidence to bring the messages to their communities to effect changes.

Impact on Policy and Practice: Improved access to mental health services by immigrants, refugees and non status PHAs requires a comprehensive strategy that promotes collaboration among all stakeholders to address the social and political determinants of health, eliminate deep-rooted social inequities, and create an accountable and responsive health system. For this to occur, target communities must be empowered to play a leading role to effect policy and practices changes.

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DIRECT AND INDIRECT EFFECT OF SOCIAL SUPPORT ON HEALTH-RELATED QUALITY OF LIFE AMONG PEOPLE LIVING WITH HIV/AIDS IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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Plain Language Summary: Social support from partners, family members, friends and others is critical for people living with HIV (PHAs). Our study examined the impact of social support on health-related quality of life of 605 PHAs living in Ontario and found that those who receive higher level of social support have a better physical and mental health. We also found that social support reduces the negative effects of depression and improves the health-related quality of life of PHAs. Increasing social support from partners, family members, friends, and others improves quality of life of people living with HIV/AIDS.

Objective: Social support is an important determinant of health-related quality of life (HRQOL) among people living with HIV. It can affect health through its impact on immune system function and treatment adherence, and by helping people with HIV cope with HIV diagnosis and associated stigma. This study will examine the direct and indirect effects of social support on HRQOL among people with HIV in Ontario.

Methods: 605 people living with HIV/AIDS in Ontario were recruited through community-based AIDS service organizations. A semi-structured interview was administered face-to-face by peer research assistants and included the MOS-HIV Quality of Life instrument, MOS-HIV Social Support Survey, and CES-D depression survey. Information on socio-demographics, health outcomes, housing, psychosocial functioning, depression and harmful substance use was also collected.

Results: The average age of participants was 43 years. Three-fourths (75%) were male, 63% identified as Gay, Lesbian, or Bisexual, 13% were Aboriginal, and 61% lived in the Metropolitan Toronto Area. About half (49%) were diagnosed with AIDS defining conditions and 48% were living alone. Only 14% were housed in facilities with support services while 6% were living in unstable housing conditions. Higher social support was significantly associated with higher MOS-HIV overall health ($p=0.002$) and physical health summary ($p=0.001$) scores. Social support accounted for 19% and 34% of the changes in overall health and physical health summary scores, respectively. The contribution of social support declined to 8% for overall health and 20% for physical health summary after controlling for depression, indicating that social support impacts HRQOL directly and also through its intermediary effect on depression.

Conclusions: Social support impacts health-related quality of life directly and indirectly. Enhancing social support from partners, family members, friends, and others may buffer the effect of depression on people with HIV and this, in turn, would significantly improve their health-related quality of life.

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UNDERSTANDING THE HOUSING EXPERIENCES OF PEOPLE WITH HIV WHO LIVE WITH AND CARE FOR THEIR CHILDREN

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Plain Language Summary: This is the first longitudinal community-based research (CBR) initiative in Canada to examine housing status and stability and its relationship to health related quality of life (HRQOL) for people living with of HIV/AIDS (PHAs). As part of our data collection strategy in-depth, semi-structured qualitative interviews were conducted with 50 PHAs across the province to provide a deeper understanding of the impact that housing instability has on their health. Unique issues and concerns were raised by PHAs who live with and care for their children including neighborhood safety, access to social supports, housing for their children in the future, and the impact of HIV related stigma on themselves and their children. These concerns highlight the need to develop housing policies and practices that reflect the needs and experiences HIV positive parents and their children.

The Challenge: PHAs who live with and care for their children face dire housing, economic and social challenges that are associated with significant risks for poor health outcomes. This study highlights some key factors that lead to these situations and provides suggestions for supported/supportive housing policy and practice based interventions.

Our Approach: Four peer research assistants conducted 50 in-depth interviews from our wider sample of 605 PHAs living across Ontario of which, 13 lived with and/or cared for their children. The interviews were semi-structured in order to ensure that key issues were addressed while at the same time providing flexibility for participants to emphasize the housing experiences that were most important to them. The interviews underwent thematic analysis and investigator triangulation.

Key Findings: Poor housing conditions, living in unsafe neighborhoods, lack of access to supports for themselves and their children, HIV related stigma, discrimination, racism, sexism, and poverty have been identified by these families as being among their most pressing concerns. These issues often result in increased stress and anxiety that negatively impact on the mental health of both HIV positive parents and their children.

Impact on Policy and Practice: These findings suggest that there is a need to develop housing policies and practices that support HIV positive parents and their children. Housing policies and practices must respond to both the individual and parenting needs of PHAs whilst at the same time address the ways that housing and housing instability impact on the short and long-term health and well-being of HIV affected children.

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MENTAL HEALTH AND ADDICTION ISSUES AND HEALTH SERVICE NEEDS OF PEOPLE LIVING WITH HIV/AIDS IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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Plain Language Summary: We interviewed 605 persons living with HIV (PHAs) in Ontario about mental health and addiction issues. More than half of them reported experiencing depression while two out of five PHAs reported harmful use of alcohol and substances. Only one out of three PHAs with depression received psychological counseling while only one out of four received psychiatric care services. About half of the PHAs need mental health services and the need was greater among PHAs from HIV endemic countries. Mental health and addiction issues are more prevalent among people PHAs and there is a significant unmet need for mental health services.

Objective: Prevalence data on depression and substance use in combination with the location, availability and access to services are critically needed in order to know where and how to address mental health and addiction issues for people living with HIV in Ontario.

Methods: 605 people living with HIV in Ontario were interviewed by peer research assistants to collect information regarding socio-demographics, social, psychological and mental health status, housing stability, health care access, experiences of discrimination, and health outcomes and health-related quality of life.

Results: Part I: Depression exists in over 50% of people living with HIV in Ontario and rates vary geographically. Harmful alcohol use occurs in 17-42% of sample while harmful drug use occurs in 1-2 out of 4 people with HIV. Substance use rates vary geographically with higher rates in Eastern and Northern Ontario. Having 2 or more conditions (depression, alcohol and/or drug use) occurs in 20-30% of sample studied. In Part II, we examined the access and location to mental health and addiction services: Of those with depression, only 1 out of 3 has received psychological services and 1 out of 4 psychiatric care in past 3 months (about 70% overall are not getting the help they need). Access to mental health services varies significantly across province - Eastern and Central Ontario has 50% less access than the GTA. Approximately 1-2 out of 4 people across the province report needing more access to mental health services. People from countries where HIV is endemic have highest rate of need of mental health services.

Conclusions: Rates of mental health (depression) and addiction issues are high in populations with HIV accessed through community-based AIDS service organizations and there are significant gaps in appropriate health services across Ontario to meet the needs of these populations.

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DIFFERENCES IN SOCIAL AND HEALTH DETERMINANTS BETWEEN FIRST NATIONS AND NON-FIRST NATIONS ABORIGINAL PEOPLE LIVING WITH HIV/AIDS IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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Plain Language Summary: Some Aboriginal groups are more affected by HIV/AIDS than others. This study compared the social and health conditions of 50 First-Nations and 30 Non First-Nations Aboriginal persons living with HIV/AIDS (APHAs). First-Nations APHAs were more likely to have been incarcerated, experience homelessness, not feel at home in their neighbourhood, use alcohol in a harmful manner, and experience depression compared to Non-First Nations APHAs. First-Nations APHAs were less likely to receive antiretroviral treatment and visit an HIV specialist. More research is required to understand the factors behind these differences and to develop appropriate health and social services for APHAs.

Objective: Aboriginal people are vastly overrepresented in the HIV epidemic in Canada, but little is known about whether some Aboriginal groups are more at risk than others. The purpose of this paper is to highlight the differences in health and social determinants between First Nations (FNs) and Non-First Nations (NFNs) Aboriginal people living with HIV/AIDS (APHAs) in Ontario.

Methods: Eighty APHAs living off of reserve were recruited and interviewed by trained peer research assistants to collect information on socio-demographics, health status, housing, health care access, homelessness, discrimination, and health-related quality of life.

Results: Fifty (63%) participants were FNs who would have lived at least part of their lives in reserve communities and 30 (37%) were NFNs who have lived most of their lives in off of reserve settings. Only 1 of 10 of all APHAs was employed and only 1 in five was housed in facilities with on-site support services. FNs-APHAs were less likely than NFNs-APHAs to have completed high school, were more likely to have been incarcerated, have been homeless, to not feel at home in their neighbourhood, have harmful alcohol use, and have experienced significant depression. FNs-APHAs were also less likely than NFNs-APHAs to be on antiretroviral treatment or to have seen an HIV specialist.

Conclusions: Our findings indicate that all APHAs are coping with severe health and social stresses that threaten their health. However, FNs-APHAs are at greater disadvantage than NFNs-APHAs. More research is required to determine to what extent conditions on reserve (e.g., little access to health care, AIDSphobia) and/or the loss of social support from leaving the reserve community contribute to the difference in health and social determinants between FNs- and NFNs-APHAs living off of reserve in order to develop more appropriate services in both reserve and non-reserve settings that will improve health of APHAs.

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DISPARITIES IN HEALTH OUTCOMES AND SOCIAL DETERMINANTS OF HEALTH BETWEEN ABORIGINAL AND CAUCASIAN PEOPLE LIVING WITH HIV/AIDS IN ONTARIO

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Plain Language Summary: We interviewed 80 Aboriginal and 443 Caucasian persons living with HIV infection (PHAs) about their health and social conditions. A higher proportion of Aboriginal PHAs (APHAs) reported having low level of education and earning lower income compared to Caucasian participants. APHAs were twice more likely to have been incarcerated and use alcohol and substances in harmful manners. APHAs were also twice more likely to experience homelessness and discrimination while accessing housing services. APHAs reported visiting family doctors or HIV specialists less frequently than Caucasian PHAs. Involvement of Aboriginal communities is required to develop programs that improve the health of APHAs.

Objective: Aboriginal Canadians are disproportionately affected by HIV/AIDS. Although they make up less than 4% of population, they accounted for about 27% of positive HIV test reports in 2006. The purpose of this study is to examine the difference in health outcomes and social determinants of health between Aboriginal (n=80) and Caucasian (n=443) people with HIV.

Methods: 605 people living with HIV in Ontario were interviewed by peer research assistants to collect information regarding socio-demographics, substance use, mental health status, housing stability, health care access, experiences of discrimination, and health outcomes and health-related quality of life.

Results: A higher proportion of Aboriginal participants were female and heterosexual ($p < 0.01$) than Caucasian participants. Aboriginal people with HIV (APHA) were less likely to have completed high school ($OR = 0.4$, $p < 0.01$) or to earn more than \$10k per year ($OR = 0.4$, $p = 0.001$), and they were more likely to have been incarcerated ($OR = 2.3$, $p < 0.001$) and to use alcohol ($OR = 2.3$, $p = 0.004$) and other substances ($OR = 1.9$, $p = 0.05$) in harmful manner. A lower proportion of APHAs (64% vs 76%, $p = 0.02$) were on antiretroviral treatment at time of interview. APHAs were twice as likely to have experienced homelessness ($OR = 2.8$, $p = 0.001$) and housing-related discrimination ($OR = 1.9$, $p = 0.004$). A lower proportion of APHAs reported visiting their family doctor (71% vs 83%, $p = 0.01$) and HIV specialist (25% vs 41%, $p = 0.01$) than Caucasian PHAs in the 3-months period prior to interview.

Conclusions: APHAs are more likely to face problems with income, substance use, incarceration, housing and health care. They face a distinct disadvantage in the social determinants of health, and are less likely to receive the health services they need. To improve health and quality of life and reduce the epidemic among Aboriginals, Aboriginal communities must be involved in developing programs and services that can close the gap between Aboriginal and Caucasian people living with HIV.

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DISPARITIES IN HEALTH OUTCOMES AND SOCIAL DETERMINANTS OF HEALTH BETWEEN PEOPLE LIVING WITH HIV/AIDS IN ONTARIO WITH AND WITHOUT HCV CO-INFECTION: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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Plain Language Summary: We compared the health status of 387 persons infected with HIV only and 95 persons infected with both HIV and Hepatitis C virus (HCV). Those infected with HIV and HCV were more likely to have been incarcerated, use alcohol and substances in a harmful manner, to have depression, and experience homelessness and housing-related discrimination when compared to those infected with HIV only. Persons infected with HIV and HCV have a significantly lower health status and were less likely to be on antiretroviral treatment. Intervention programs that address the needs of persons dually infected with HIV and HCV are critically needed.

Objective: Hepatitis C virus (HCV) infection affects the health and quality of life of people with HIV. Clinical course and treatment of each infection is complicated by the presence of the other infection. The purpose of this study is to examine the differences and impact of the social determinants of health in people with HIV and HCV as compared with those with HIV alone.

Methods: 510 people living with HIV in Ontario received a semi-structured interview by peer research assistants and included standard questionnaires including the MOS-HIV Health Survey and CES-D. Data on socio-demographic, health, psychological status, and housing characteristics were also collected. Of the 510 interviewed, 28 participants reported a history of HCV infection, but were clear of the infection at the time of the interview. Data on the remaining 482 individuals (95 HCV-positive and 387 HCV-negative) were the focus of this study.

Results: A significantly higher ($p < 0.001$) proportion of HIV/HCV participants were heterosexual, Aboriginal, previously incarcerated at least once, used harmful levels of alcohol and drugs, more depressed, and had experienced homelessness and discrimination in trying to get housing as compared to those with HIV alone. Those with HIV/HCV were also significantly ($p < 0.001$) less likely to have completed high school, to be employed, to be on antiretroviral treatment, and had lower overall health and mental health compared with those with HIV alone.

Conclusions: In our Positive Spaces, Healthy Places study, 1 out of 5 participants were co-infected with HIV and HCV. People with HIV and HCV are facing significant challenges over those with HIV alone in accessing and maintaining stable housing; they are also dealing with higher rates of depression and substance use that are contributing to worse health outcomes. Interventions are critically needed to address the health and well being of people with HIV/HCV co-infection in Canada.

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HIGH RATES OF HARASSMENT AND VIOLENCE AGAINST MEN WHO HAVE SEX WITH MEN WHO ENGAGE IN PAID SEX IN CHENNAI, INDIA

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Plain Language Summary: In India, as elsewhere, men who engage in paid sex with other men are at high risk for HIV/AIDS. We conducted a survey among 200 men who have sex with men (MSM) recruited from public sex environments ("cruising areas"). MSM engaged in paid sex had lower education and faced high levels of harassment compared to those who didn't engage in paid sex; they used condoms more consistently, but had much higher numbers of sexual partners. Findings highlight structural determinants of risk - poverty, discrimination and violence - that place MSM at heightened vulnerability for HIV infection.

Objective: To identify correlates of paid sex among MSM in Chennai, India, in order to inform tailored HIV preventive interventions.

Methods: Community-based organizations mapped public sex environments (PSE's; n=50) in Chennai. Ten PSE's were randomly selected. MSM (n=200) were recruited using time-space sampling, with probability-proportional-to-estimated-size. A 30-minute face-to-face questionnaire was administered off-site in Tamil, with items related to demographics, forced sex, harassment, HIV/AIDS knowledge, and sexual behaviours. The association of predictors with paid sex was assessed with chi-square tests and multiple logistic regression.

Results: Participants' mean age was 28.5 years. Most (71.5%) identified as kothis; 60% had < high-school education, two-thirds had monthly income <2000 Indian rupees. Over one-third (35.0%) reported daily/weekly harassment; 40.5% reported forced sex in the past year. The prevalence of paid sex was 59.5% (95% CI, 52.7% - 66.3%). Univariate analyses indicated that paid sex was associated with kothi identity ($x^2 = 14.46$; $p < .01$), less than high-school education ($x^2 = 4.79$; $p < .05$), harassment ($x^2 = 11.75$; $p < .01$) and forced sex ($x^2 = 3.98$; $p < .05$). Adjusted analyses revealed that paid sex was associated with kothi identity (adjusted odds ratio (AOR) = 2.62, 95% CI, 1.34 - 5.10) and harassment (AOR = 2.34, 95% CI, 1.16 - 4.72). MSM who engaged in paid sex (vs. no paid sex) had a mean of 31 partners, past month (vs. 4, $t = 6.17$, $p < .001$) and 71.2% used condoms consistently (vs. 46.4%, $x^2 = 18.34$; $p < .01$). Overall, 32.5% were never tested for HIV.

Conclusions: Epidemic rates of harassment and sexual violence against MSM who engage in paid sex, predominantly kothis, suggest interventions should target structural factors placing these men at increased risk for HIV/sexually transmitted infections and other health-compromising conditions. The effectiveness of individual-level, knowledge-based and condom-focused preventive interventions may be seriously constrained in the context of poverty, low education, harassment and sexual violence.

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CONDOMS, ABSTINENCE, RIGHT AND WRONG: CRITICAL REFLECTION ON AN FBO'S HIV PREVENTION PROGRAMME IN SOUTH AFRICA

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Plain Language Summary: We did a big survey and many focus groups to figure out how well a particular school-based HIV prevention intervention works for adolescents in a poor community in South Africa. This intervention was designed and implemented by a faith-based organization. While analyzing our data, we discovered some seemingly baffling contradictions. However, upon further reflection, we realized that these contradictions offer a window into the challenges facing faith-based approaches to HIV prevention. In this presentation, we talk about these contradictions and what they mean for future faith-based HIV/AIDS interventions.

The Challenge: To reflect upon the complexities inherent in the faith-based orientation of an HIV prevention program in a severely resource-deprived community in South Africa.

Our Approach: This analysis is based on our experience evaluating the iThemba Lethu HIV Prevention Programme, a comprehensive, 5-year, school-based intervention operating in Cato Manor, South Africa. Our approach for this analysis was to reflect on the contradictions and disconnects emerging from within our qualitative (11 focus groups) and quantitative (809 youth surveyed) data in order to develop a more sophisticated understanding of the opportunities and challenges facing faith-based approaches to HIV prevention programming.

Key Findings: The focus group participants (students, parents, and teachers) almost unanimously praised the iTL intervention for its positive impact on their community and their own personal growth. Few negative comments arose despite probing. However, critical analysis of the data revealed disconnects within the program's approach. Example 1: Participants' delight with the abstinence-based approach to HIV prevention despite awareness of the structural determinants of HIV vulnerability in their community (e.g., women having little control over their sexual decision-making). Example 2: The simplistic, dichotomizing good-versus-bad framing of behaviour choices and the implications therein for HIV prevention if people are unable to adhere to "good choices". Furthermore, the wrap-around, immersive nature of the intervention emerged as central to the program's success. One account for this uniquely comprehensive approach lies in the faith-based orientation of the intervention whereby its service providers view their roles as "a calling" versus a job. As such, we reflect upon the challenges facing a secular version of such an intervention.

Impact on Policy and Practice: Faith-based responses to HIV are among the minority in Canada but predominate worldwide and present a crucial strategy for reaching people in need. In-depth evaluation of the complexities, contradictions and opportunities inherent in such approaches is key for better understanding the pathways through which these interventions work in order to guide program planners and policy makers.

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REDUCING THE RISKS FROM ALCOHOL AND AIDS: VIGOROUS NGO AND GOVERNMENT EFFORTS AND TIMID INDUSTRY RESPONSES

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Plain Language Summary: Our evidence-based health interventions have demonstrated increased risk for HIV/AIDS transmission among at-risk groups in Cambodia following overuse of alcohol. A series of questionnaire studies and workplace breathalyzer testing in 2006-2008 found no reduction in alcohol abuse among women beer-sellers, despite the international industry's imposition of a Code of Conduct for Beer-sellers in Nov. 2006. We found women in 2008 still drinking over 1.5 litres of beer nightly, when the Beer Selling Industry Cambodia (BSIC) CODE prohibited drinking in the workplace. We found condom use decreased following drinking, increasing risk for HIV/AIDS. HIV/AIDS education workshops and outreach peer-educator programs since 2002 have reduced HIV/AIDS prevalence from 20.5% (1995-2003) to under 7% (2007-8), but industry has been slow to provide adequate health education, continues to create extreme economic pressures on its beer-sellers by paying only 50% of the women's monthly family support costs, and steadfastly refusing to provide free HAART to positive workers, although it is the policy of several companies to do so (e.g., Heineken). Cooperation with other NGOs and government health agencies has been excellent; the beer industry remains profit-driven and recalcitrant about workers' health and safety risks. A Fetal Alcohol Syndrome screening clinic was held in 2008 for beer-sellers who drank during pregnancy, and we cooperate with the government's Mother-to-child Transmission Prevention program at the Mondol Moi Health Centre

The Challenge: Use Participatory Action Research and evidence-gathering to convince all stakeholders to improve the health and safety of the beer-selling workplaces, both for beer-sellers and male customers, especially to reduce the risk of unsafe sex after alcohol impairment. Highest HIV/AIDS prevalence rates are no longer among sex-workers but among married monogamous women and their non-monogamous husbands.

Our Approach: SiRCHESI NGO combines peer-educator health outreach (about 6500 contacts in 2007, with 7500 targeted for 2008) with proactive health workshops for groups at risk for HIV/AIDS, including married women, men, beer-sellers, and young souvenir vendors. We collect behavioural surveys from 560 at-risk individuals yearly (2002-2008) to monitor changes in HIV prevention behaviours. We collect interview and breathalyzer data also in restaurants.

Key Findings: There have been no changes, despite beer industry press releases, in the health and safety of women beer-sellers in Siem Reap, in terms of risk for alcohol overuse and condom consistency decrease. HAART is not provided by International Beer companies such as Heineken, who declare this as part of their world-wide HIV/AIDS treatment program for their workers (e.g., in Africa). High breathalyzer scores among male drinkers who then drive home also adds to injuries through traffic accidents.

Impact on Policy and Practice: To pressure profitable beer companies to care more for the health, HAART, workplace safety and financial security of their beer-sellers in Cambodia, we have begun informing shareholders groups, the press, and a documentary film is in preparation for 2009. We provide information on 6 related websites, e.g., www.fairtradebeer.com

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MONITORING HIV/AIDS AND COMMUNITY HEALTH (2001-2008) IN SIEM REAP CAMBODIA: OUTREACH PROGRAMS AND BEHAVIOUR CHANGES INFORMING HEALTH INTERVENTIONS.

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Plain Language Summary: Since 2001, Canadian university students, as well as students and interns from Australia and Singapore, have, with international researchers, confronted the HIV/AIDS epidemic in Siem Reap Cambodia, where an estimated 10,000 PLWHAs abide, with about 3000 now receiving HAART through government, NGO and Global Fund co-operation. 560 questionnaires are administered annually at the VCCT clinic to 4 risk groups, to monitor changes in behaviours, knowledge and attitudes concerning HIV/AIDS and STIs. In addition, peer-educators increasingly reach out to risk groups; there were about 6500 contacts in 2007. Information about behaviour changes (e.g., condom use patterns) is incorporated into our health education workshops and outreach programs.

The Challenge: Local health workers are increasingly being trained to handle all aspects of the community interview monitoring, up to and including data entry and analysis in Cambodia. Canadian, Singaporean and Australian students have been guiding this capacity-building. The questionnaire's thoroughness about HIV/AIDS and STIs has been brought to the attention of the National government agency. (NCHADS) It is hoped that this outreach and monitoring will be completely local-stakeholder driven by 2010.

Our Approach: Questionnaires are administered annually at the VCCT clinic to married women, men, beer-sellers and brothel-based sex workers. Outreach peer-educators target 3 of those groups, as well as young child souvenir vendors.

Key Findings: We are currently analyzing data to show that condom use is increasing across groups, as serological data shows decrease prevalence of HIV/AIDS. But worrisome is the finding that married monogamous women seem to be at the same risk as the married brothel workers.

Impact on Policy and Practice: The questionnaire data continuously guides SiRCHESI's outreach and workshop programs, which can be fine-tuned to react to new community trends and crises, such as the crisis with monogamous married women and higher HIV prevalence rates. As this becomes a totally local activity, foreign student and researcher involvement will fade out and play an advisory role, if required.

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CANADIAN STUDENT CONTRIBUTIONS TO COMBATING HIV/AIDS IN CAMBODIA: A DECADE OF MULTI-SECTORIAL COMMUNITY HEALTH INTERVENTION PROGRAMS

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Plain Language Summary: In 2000, the NGO SiRCHESI (Siem Reap Citizens for Health, Educational and Social Issues) was founded in Cambodia to combat the HIV/AIDS pandemic, with highest prevalence rates in South East Asia. With local stakeholders being trained to deliver health services, academics procured resources and, beginning in 2002, students from CANADA (as well as Singapore and Australia) visited to participate in health promotion workshops, data collection, program evaluations and capacity building training. From Ontario and other successful HIV/AIDS programs, best practices were culturally adapted in Cambodia for AIDS prevention with high risk groups, surveillance and monitoring, reducing other health risks (Alcohol abuse, Fetal Alcohol Syndrome), preventing violence against women and children, street-proofing children against sexual exploitation and trafficking, and removing women from HIV-high risk beer-selling environments and training them for careers in the safer hotel industry.

The Challenge: We wanted to strike a proper balance between foreign “expertise” and local capacity-building to have local health workers and other stakeholders –e.g., beersellers, child souvenir vendors, married women—at risk for HIV/AIDS—deliver the health interventions after some training and evidence-collection with the help of students working on theses or research internships. No one was permitted to “take data out” of the community without having left skills, knowledge and additional health promotion capacity in the community. M.A.C. AIDS Fund has been the principle funder (along with donations).

Our Approach: We use a culturally sensitive version of Participatory Action Research to engage stakeholders.

Key Findings: In 2006-7, HIV/AIDS prevalence (VCCT) dropped to below 10% for sex-workers and beer-sellers, but still remained above 15% for married men and monogamous married women. 25 women entering the SiRCHESI Hotel Apprenticeship Program have stopped selling sex, stopped nightly drinking, and are adapting well to a safer, healthier, more economically secure workplace.

Impact on Policy and Practice: We are increasingly reaching to married men and women, now the highest risk groups in the community. As health partners, we have had cooperation from other NGOs, government health agencies, the Hotel Industry but not the Beer industry.

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CHANGING WOMEN'S CAREERS IN CAMBODIA (2006-8): AN HIV/AIDS "PRIMARY INTERVENTION" STRATEGY

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Plain Language Summary: As part of a “primary intervention” strategy to reduce risk for HIV/AIDS, underpaid Cambodian beer sellers—a risk group among “indirect sex workers”—with prevalence rates varying around 20.4% (1995-2003) were recruited for a 24-month Hotel Apprenticeship training program by the local NGO, SiRCHESI, in partnership with Toronto-based M.A.C. AIDS Fund, and 3 local Hotel partners in 2006 and 9 in 2007. In 2 cohorts, 9 and 16 women were offered 8 months of intensive literacy training in Khmer, English conversation skills for the Hotel industry, health, social and life skills training, 4 hours each morning, 6 days a week at the SiRCHESI school. Students were mentored on-the-job in the partner hotels in 8-9 hour afternoon-evening shifts. After 8 months, students signed 16 month contracts with their hotels, with SiRCHESI fellowships ensuring living wages to support all family needs. Sex-work ceased, nightly drinking ended, and self-esteem rose greatly. We report on various indicators monitoring career progress in this 2-year project.

The Challenge: Women selling beer in Cambodian restaurants were underpaid by half by the international beer brands employing them, and many engaged in risky sex-work after drinking excessively with customers (1.5 litres of beer nightly, 27 nights monthly). While our workshops and outreach peer-educator project had increased condom use with clients from 44% (2001) to over 90% 2006-8), alcohol use lowered rates of consistent condom use, increasing risk of HIV/AIDS. We continue to educate beer-sellers about reducing risks, and pressure beer companies to be more responsible for the health and safety of their workers (including provision of HAART, as needed). But the “primary intervention” was an idea to remove women from the unsafe, hi-risk beer industry, and gain them jobs and careers in the hotel industry, which excluded them on the grounds of illiteracy. We convinced Hotel partners to be health-promotion partners.

Our Approach: With the help of local staff, Australian volunteers International teachers, and our Canadian students we created a school and a curriculum to train literate, English-speaking skilled hotel workers within 8 months, and to continue partnering with the training hotels as their careers advanced for an additional 16 months, monitoring progress and motivation weekly, bi-weekly, and bi-monthly, with additional major evaluations at 6 month intervals.

Key Findings: Risks for HIV/AIDS and alcohol abuse were dramatically reduced; in addition measures of academic progress, workplace motivation, job-satisfaction, self-esteem and empowerment increased in each Cohort over time. Gabe Pollock’s thesis at the University of Guelph analyzes many of these indicators.

Impact on Policy and Practice: We are recommending to the Hotel Industry that they emulate this Apprenticeship program on their own, taking over the training program and bringing more women into their safe workplaces. We were able to overcome stigma of the women formerly at high risk for HIV/AIDS and to integrate them into the partner hotels’ work-force.

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INHIBITION OF HIV-1 ENTRY USING A MULTIMERIC HAMMERHEAD RIBOZYME

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Plain Language Summary: CCR5 has been the subject of major investigations as it serves as a co-receptor for HIV-1 and HIV-2 transmission through mucosal and intravenous routes and because it is not critical for the host. Therefore, down-regulation of CCR5 receptor on the cell surface may prevent HIV entry. Hammerhead ribozymes are small RNA molecule that can be designed to recognize and cleave a specific target RNA. We have designed a multimeric hammerhead ribozyme (Rz1-7), consisting of ribozymes that target seven unique sites within the CCR5 mRNA, and have shown that cells expressing this ribozyme are highly resistant to R5 HIV-1.

Objective: Assessment of mouse stem cell virus (MSCV)-based gammaretroviral and HIV-1-based lentiviral vectors expressing Rz1-7 for inhibition of R5 HIV-1 entry in transduced CD4+ T lymphoid (PM1) cell line.

Methods: Rz1-7 is designed to target seven unique sites within the human CCR5 mRNA. An MSCV-based MGIN-Rz1-7 vector and an HIV-1-based HEG1-Rz1-7 vector were designed to express Rz1-7. The expression and activity of Rz1-7 in transduced PM1 cells were demonstrated by RT-PCR and flow cytometry. Untransduced and transduced PM1 cells were challenged with R5 HIV-1 (BaL) and inhibition of virus replication at the level of entry was demonstrated by PCR.

Results: The cleavage activity of Rz1-7 in vitro and in transduced PM1 cells was shown by cleavage reactions and decreased cellular CCR5 mRNA/protein levels. High levels of progeny virus were produced when the transduced cells were challenged with an X4 HIV-1 (NL4-3) strain, suggesting that Rz1-7 expression does not affect replication of viruses that utilize the CXCR4 co-receptor. When the transduced cells expressing Rz1-7 were challenged with the R5 HIV-1 (BaL), 99-100% inhibition of progeny virus production was observed for the duration of the experiment (2-3 months). Inhibition occurred at the level of viral entry, as no HIV-1 DNA could be detected. This work has been published in *J Gen Virol* 89:2252-2261 (2008).

Conclusions: Our results demonstrate that Rz1-7 can effectively cleave the CCR5 mRNA and prevent R5 HIV-1 infection at the level of entry. The extent of inhibition observed in our experiments is much better and the duration much longer than those reported for mono- or trimeric ribozymes, shRNAs, or antisense RNA targeted against the CCR5 mRNA. Therefore, we anticipate that this multimeric ribozyme will be beneficial for HIV-1 gene therapy.

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HIV TAT BINDS TO THE CYTOPLASMIC TAIL OF THE IL-7 RECEPTOR ALPHA-CHAIN AND INDUCES RECEPTOR DEGRADATION VIA THE PROTEASOME

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Plain Language Summary: We have previously shown soluble HIV Tat protein down regulates expression of the IL-7 receptor alpha-chain (CD127) on CD8 T-cells and in so doing impairs CD8 T-cell proliferation and cytolytic potential. We show here Tat binds to CD127 at the cell surface and targets CD127 for proteosomal degradation through a process dependant on microtubules.

Objective: Our objective is to determine the mechanism by which Tat down regulates CD127 on CD8 T-cells.

Methods: CD8 T-cells were isolated from healthy volunteers and incubated in media alone or with Tat (10 ug/ml) in the presence or absence of inhibitors as indicated. CD127 surface and intracellular expression were measured by flow cytometry, fluorescence microscopy and by Western blot. Tat binding to CD127 was evaluated by ELISA and co-immunoprecipitation.

Results: As expected, Tat protein is taken up by CD8 T-cells and accumulates in the cell over 6-12 hours. Once in the cytoplasm, Tat co-localizes with CD127 at the cell surface and increases the rate at which the receptor is internalized and degraded. Co-immunoprecipitation from protein extracts and additional protein binding experiments have demonstrated a direct interaction between Tat and the cytoplasmic tail of CD127. While colchicine does not prevent Tat from entering CD8 T-cells, it does block Tat's ability to remove CD127 from the cell surface indicating a role for microtubules in this process. Proteasome inhibitors (MG132 and Lactacystin) blocked Tat's ability to decrease surface and intracellular levels of CD127 indicating Tat likely targets the receptor for degradation by the proteasome.

Conclusions: Soluble HIV Tat protein, acting in a paracrine manner, enters CD8 T-cells and interacts directly with the cytoplasmic tail of CD127 at the cell membrane to induce receptor capping and degradation via the proteasome. Through this mechanism, HIV is able to directly impair CD8 T-cell function.

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THE ROLE OF HNRNPS IN HIV GENE EXPRESSION

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Plain Language Summary: Many host factors interact with viral RNA and play a role in production of viral protein, and thus virus. We are defining the role of host factors called heterogeneous nuclear ribonucleoproteins (hnRNPs) in this process. Uncovering which are important could lead to new ways to inhibit infection.

Objective: HIV-1 gene expression is a tightly regulated process in which host factors play an important role. The 5'-end capping, splicing and 3'-end processing of pre-mRNA, coordinated during transcription, significantly influences export and translation. Heterogeneous nuclear ribonucleoproteins (hnRNPs) have been implicated in HIV-RNA metabolism, from splicing to trafficking, localization and translation. Given the complexity of HIV-RNA processing, we hypothesize several hnRNPs are involved. Our objective is to identify the relative impact of hnRNPs, and investigate their role in viral RNA splicing, protein production and particle formation.

Methods: Using siRNA, an initial panel of seven hnRNPs (A1, A2, C, D, H, I, K) were screened for involvement in gene expression from a proviral HIV-genome with Gag-GFP fusion. Cellular viability was monitored over time by FACS analysis of AnnexinV/7AAD staining. Cell lysates were analyzed by Western blot to determine siRNA efficacy and changes in viral protein production. Viral particle production was determined by ELISA quantification of p24gag within supernatants. Viral RNA splice variants were measured by RT-PCR specific for 2- and 4-kb RNAs and RNase protection assays.

Results: Knockdown of targeted hnRNP was confirmed after 72 hours, with minimal effects on viability for all factors except hnRNP K. Preliminary results show knockdown of hnRNP A2 and, to some degree, hnRNP A1 increases gp120, while knockdown of hnRNP I increases p24. Interestingly, hnRNP A2 knockdown correlated with increased viral particle release. Knockdown of hnRNP D and hnRNP K appear to reduce intracellular gp120 and p24 expression, but this did not translate to reduced particle release. Because hnRNP K knockdown decreased viability, this may have impacted these results. Analysis of viral RNA processing is ongoing, and preliminary results suggest knockdown of hnRNP A1 and, to a lesser extent, hnRNP A2 induces alterations in viral RNA splicing with distinct differences in pattern. No other significant changes have been observed as yet for the remaining hnRNP.

Conclusions: It is evident hnRNPs play a role in HIV-1 gene expression. This complex process requires extensive investigation to determine the requirement of hnRNPs in viral RNA processing, transport and expression. In identifying critical host factors, novel targets for future drug development may be uncovered.

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STI SMALL TALK: CHARACTERIZATION OF A N. GONORRHOEAE-DERIVED MOLECULE THAT INDUCES HIV-1 LTR EXPRESSION.

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Plain Language Summary: Clinical and epidemiological studies demonstrate that *N. gonorrhoeae*, the causative agent of gonorrhoea, promotes HIV-1 transmission. Our work aims to understand how *N. gonorrhoeae* mediates these effects at the molecular level. We determined that bacterial-derived factors that are known to induce innate immunity are not responsible for the observed induction of HIV expression. We then used a systematic biochemical approach to characterize a novel *N. gonorrhoeae*-derived factor that induces HIV-1 expression.

The Challenge: In vitro studies established that *N. gonorrhoeae* infection stimulates transcription of the HIV-1-LTR in a dose-dependent manner and that *N. gonorrhoeae* cell-free culture supernatants (CFS) are sufficient for the induction. This study aims to elucidate the *N. gonorrhoeae*-derived factor(s) that induce(s) HIV-1-LTR expression in CD4+ T lymphocytes.

Our Approach: Induction of HIV-1 expression upon exposure to various agonists or live bacteria was evaluated using 1G5 cells, a clonal derivative of the Jurkat CD4+ T cell line which contain a stably integrated luciferase HIV-1 5'-LTR reporter.

Key Findings: To determine if known innate immune receptors are responsible for the induction of HIV-1 in T lymphocytes, 1G5 cells were exposed to agonists specific for toll-like receptors (TLRs) 1 through 9 and Nods 1 and 2. Flagellin, a TLR5 agonist, was the only agonist tested to induce expression. *N. gonorrhoeae* does not have flagellin, but does express a variety of cell surface virulence factors, including Type IV pili and Opa protein adhesins. Comparing wild type and mutant strains showed no discernible difference in their effect on HIV-1-LTR expression, suggesting that these factors are not required for the induction of HIV-1 expression. To determine whether the inducing factor was restricted to the pathogenic *Neisseria*, whole bacteria and CFS from non-pathogenic commensal *Neisseria* species or *Escherichia coli* were tested for activity. All *Neisseria* strains were able to induce HIV-1 expression to comparable levels to the pathogen, while little induction was apparent in response to *E. coli*. A systematic biochemical approach was undertaken to identify the *Neisseria*-derived inducing factor present in CFS, and allowed development of a purification scheme that yielded a factor which induces HIV-1 LTR expression in a dose-dependent manner.

Impact on Policy and Practice: Elucidating how *N. gonorrhoeae* stimulates HIV expression will lead to developing strategies to intercept this process. Disrupting the synergy between HIV-1 and gonorrhoea will have a great impact on the HIV pandemic.

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THE PREVALENCE OF, AND FACTORS ASSOCIATED WITH HAVING UNPROTECTED ANAL INTERCOURSE (UAI) WITH BOTH REGULAR AND CASUAL SEX PARTNERS AMONG MEN WHO HAVE SEX WITH MEN (MSM) IN ONTARIO

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Plain Language Summary: The prevalence of, and factors associated with having unsafe sex with both regular and casual sex partners among MSM have not been well studied in Ontario. Our analysis suggests MSM who disclosed serostatus, those who immigrated to a much larger community, those who gave drugs, goods or shelter for sex, and those who had more sexual partners were more likely to have had unprotected anal intercourse (UAI) with both regular and casual partners.

Objective: This analysis describes the prevalence and variables associated with having UAI with both types of partners.

Methods: The data were from a self-completed, venues-based survey of a sample of self-identified MSM. Multivariate logistic regressions identified factors associated with having UAI with both regular partner and casual partners.

Results: Of 5,080 men 34.1% (95%CI: 32.7%, 35.5%) reported having sex with both regular and casual partners (past 3 months), and 7.5% (95%CI: 6.8%, 8.2%) reported UAI with both partner types. UAI with both types of partners was associated with serostatus disclosure (always vs. never, OR:2.67, 95%CI:1.69- 4.90, sometimes vs. never, OR:1.97, 95%CI:1.29-3.07), migration to a much larger community (OR:1.80, 95%CI:1.13-2.87), more sexual partners (≥ 10 vs. < 10 , OR:1.60, 95%CI:1.10-2.32), giving drugs, goods, shelter for sex (yes vs. no, OR:2.41, 95%CI:1.18-4.90).

Conclusions: Among this sample of men, those who reported UAI with both regular and casual partners represent a significant subpopulation. Patterns of sex-seeking and variables associated with UAI would suggest the men in this subgroup may have a unique relationship to risk. Further study is required to understand the roles and meanings and risk-taking for these men.

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MEN, INTERNET AND SEX WITH MEN (MISM) STUDY: CYBERSPACE IN THE SEXUAL LIVES OF MEN WHO HAVE SEX WITH MEN

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Plain Language Summary: Men who have sex with men (MSM) use the Internet to find partners for offline sexual encounters. It is important to investigate men's own understandings of their use of the Internet for sexual purposes so that HIV prevention can respond appropriately. The Men, Internet and Sex with Men Study interviewed 23 men of various sexual orientations about their experiences with using the Internet for same-sex sexual purposes. The findings illustrated that the Internet cannot be considered just another place for MSM to find sex partners, but rather must be understood within the context of the men's broader social and sexual lives. Men's sexual decision making in sexual encounters arranged online can be influenced by various "offline" factors, thus it is important that HIV prevention initiatives respond to men's experiences both online and offline.

The Challenge: There is growing interest in understanding the role the Internet plays in the sexual lives of men who have sex with men, from an HIV transmission and prevention perspective. Most work to date has been quantitative. The Men, Internet and Sex with Men (MISM) Study is a qualitative study of men's perspectives on their use of the Internet for same-sex sexual purposes. It focuses on the complexities and nuances of men's online interactions to provide insight into HIV prevention which can be sensitive and responsive to these experiences.

Our Approach: A focused ethnography, drawing on 23 semi-structured interviews with men (gay, bisexual and heterosexual) in the Greater Toronto Area who use the Internet for same-sex sexual purposes. Ages ranged from 20 – 61; 6 men were HIV-positive and 15 men were HIV-negative (2 were untested). Interview data were analyzed inductively from an interactionist perspective, informed by social risk theories.

Key Findings: Key findings include: (1) contextual factors shaped why men used the Internet for sexual purposes, and how they did so; (2) online communication offered unique ways of presenting the self and constructing the potential sex partner; and (3) sexual encounters arranged online continued to be influenced by "offline" factors.

Impact on Policy and Practice: The Internet can have positive and negative implications for HIV transmission and prevention. It is naive to conceptualize the Internet as "just another place to find sex," because men have different motivations for and expectations of their Internet use. The social context of men's Internet use and their online interactions can influence their sexual experiences. Prevention efforts must be responsive to men's experiences offline, online, and the interaction between the two.

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CAUGHT BETWEEN HOMOPHOBIA AND RACISM: EFFECTS OF DISCRIMINATION UPON THE SEXUAL BEHAVIOUR OF MEN WHO HAVE SEX WITH MEN (MSM) FROM ETHNIC AND RACIAL MINORITY COMMUNITIES

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Plain Language Summary: To bridge gaps in knowledge and evidence informing policy and programs for ethno-racial MSMs in Toronto, a community based research was conducted involving 10 frontline workers and 70 ethno-racial MSMs from diverse backgrounds. A key finding arose from the study found that homophobia and racism have compounding impact on our participants' ability to negotiate and engage in safer sex practices. To effectively address these factors, prevention efforts need to include language specific and culturally sensitive materials as well as capacity building efforts to deal with coming out, sexual disclosure and self esteem issues of ethno-racial MSMs.

The Challenge: Despite the fact that ethno-racial and people of color communities made up nearly half of the new HIV cases amongst MSM in Canada (Public Health Agency of Canada, 2006), few studies have been done that examine the issues that may impact upon risky sexual behavior in this vulnerable populations. A government, academic and community research partnership was developed to explore issues affecting these communities and identify priority agenda for research and interventions.

Our Approach: This community-based study was comprised of 10 individual interviews with frontline MSM prevention workers and focus groups with 71 MSM from the target communities (African, Caribbean, Chinese, South Asian, Southeast Asian, Portuguese, and Spanish). Results were analyzed thematically using N-Vivo 7.0.

Key Findings: Participants reported that homophobia was prevalent in many cultural communities and fear of rejection and discrimination by family and friends was a driving force for many ethno-racial MSM to conceal their sexual identity. Many seek unplanned same sex encounters in anonymous settings. These create barriers for them to access HIV prevention information and to practice safer sex. Among gay identified participants, racism was identified as a HIV risk factor in that the gay community tends to view white men as more attractive and desirable than men of colour. As a result, many participants found it difficult to negotiate safer sex with white sexual partners due to lowered self-esteem and fear of rejection. Systemic racism also manifested as inequitable resource support of programs targeting ethno-racial MSM.

Impact on Policy and Practice: Homophobia and racism both appear to increase HIV risk behaviour among ethno-racial MSM. More HIV prevention needs to focus on reaching non-gay identified ethno-racial MSM through their cultural communities, as well as promoting culturally inclusive HIV prevention messages in the gay community. Structural interventions to decrease homophobia and racism may have a positive impact upon the sexual health of MSM.

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INFORMATIONAL GAPS, MYTHS AND MISCONCEPTIONS OF HIV INFECTION: A CALL FOR THE HIV SECTOR TO RESPOND TO ETHNO-RACIAL MSM'S UNMET PREVENTION INFORMATION NEEDS

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Plain Language Summary: Our community based research involving over 70 Ethno-racial MSM and 10 frontline workers identified a key area of concerns and relevance affecting ethno-racial MSM in relation to HIV prevention relates to informational gaps, myths and misconceptions on HIV infection. These include false belief of who is affected by HIV, degree of infectivity related to different sexual activities, gaps of information related to treatment and complications, language barriers for newcomers and invisibility of negative impact of HIV. Policies and programs need to address these barriers in order to successfully lead to behavioral change in the target populations.

The Challenge: To identify some myths and misconceptions of HIV infection affecting ethno-racial MSM within the Greater Toronto Area and suggest strategies to improve HIV prevention efforts.

Our Approach: This community-based research was comprised of individual interviews with 10 prevention workers and 7 focus groups with MSM from the target communities (African, Caribbean, Chinese, South Asian, Southeast Asian, Portuguese, and Spanish). Results were analyzed thematically using N-Vivo 7.0 and a draft report was brought back to target groups for validation and then disseminated to wider stakeholders to inform future research development.

Key Findings: Participants reported the following myths and misconceptions about HIV infection in their communities: a) some believed STIs could only be contracted through anal sex and considered other sexual activities non-risky; b) others felt that HIV was a gay or white-man disease and that non-gay identified men of colour were non-sexual or less promiscuous and therefore not at risk for HIV infection. These men may use condoms only with white men, but not with men of colour, and tends not to access HIV information and services; c) Still others thought that there was a cure for HIV/AIDS; d) some considered urinating after unprotected anal sex will prevent HIV infection; e) some men assumed it's impossible to get HIV if you are the inserter during anal coitus.

Impact on Policy and Practice: HIV prevention education should focus more on the whole cultural & religious community inclusive of families and moves beyond urban cores to suburban areas; more information on correct use of condoms are needed; HIV information needs to be accessible in different languages and different medium e.g. the Internet; interactive web based messages can be effective in addressing people's questions. It is important to integrate HIV information in broader social and cultural programs and services in the ethno-racial communities in a culturally sensitive manner.

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DECOLONIZING KNOWLEDGE PRODUCTION: ARTS-BASED APPROACHES TO INSPIRE ABORIGINAL YOUTH LEADERSHIP IN HIV PREVENTION

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Plain Language Summary: Eurocentrism is a pervasive feature in most research approaches. Art-based methods represent one way to assist with decolonizing the research process. Used to inspire Aboriginal youth leadership in HIV prevention, this approach can assist to unpack the links between HIV and colonialism. Experience using this method will be discussed and works created by Aboriginal youth will be shared.

The Challenge: Beginning in the 1980s, authors began to challenge the pervasiveness of neo-colonial perspectives in the context of research (Seidman, 2004). Arts-based participatory methods are one strategy towards decolonizing methodologies. We will discuss our experiences adopting this approach to developing Aboriginal youth leadership in the area of HIV prevention.

Our Approach: A participatory research design using arts-based approaches (e.g., photography, theatre, painting, hip-hop, etc.) in six Canadian communities is planned to unpack the links between HIV and colonialism. Local Aboriginal youth coordinators are being hired and trained to coordinate workshops events. Data will be collected through the creation of artistic productions and feedback surveys. In-depth interviews will be conducted with youth six weeks after each workshop. Analyses will be conducted collaboratively. In October of 2008, we will be hosting our first workshop in Toronto.

Key Findings: Arts-based workshops provide an important opportunity to engage Aboriginal youth and facilitate the development of self-respect, confidence, and connection among peers. The value of using a decolonizing approach is supported through involvement of Aboriginal research team members, local Aboriginal youth coordinators and increased cultural knowledge. A decolonizing approach supports Aboriginal culture in important ways while arts based approaches focus attention away from pathologizing models of HIV prevention. Together, this may result in more affirming, critical, cultural and age appropriate prevention messaging (Stewart et al, 2008). Works created will be shared.

Impact on Policy and Practice: We believe that decolonizing approaches to the development of Aboriginal youth prevention messages challenges Eurocentric meanings related to Aboriginal identity, health literacy and involvement in research. The research approach used potentially builds on OCAP, offers researchers the opportunity to critically reflect on issues of social location and results in findings more firmly embedded in cultural understandings of health.

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EXPLORING THE EXPERIENCES AND DISEASE PREVENTION NEEDS OF PEOPLE WHO USE CRACK: PRELIMINARY FINDINGS FROM FOCUS GROUPS WITH CRACK USERS IN OTTAWA

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Plain Language Summary: Despite an increasing number of Canadians smoking crack, little is known about crack smokers' health and disease prevention needs from the perspectives of the users themselves. In response to this situation, a team of researchers, front-line workers and policy experts initiated the development of a multi-year study to investigate best practices for program and policy development for men and women in Ontario who smoke crack. Emergent focus group findings from Phase 1 of the study identify the need for greater access to prevention programming and the need for greater awareness of crack use among health care providers.

Objective: To present preliminary findings from a series of focus groups examining the disease prevention and health care needs of people who smoke crack.

Methods: Populations within the crack-smoking community, identified through consultation with community partners, were recruited through partnering agencies and community health centres in Ottawa. Assignment of participants to focus groups was based on gender, age, ethnicity, and drug use.

Results: Ten focus groups were conducted with between three and eleven participants in each group. Themes common to all groups included: (1) the power of the addiction and the urge to get 'high' quickly often overrides the negative consequences of crack use, including risk for infections such as hepatitis C; (2) glass stems to smoke crack are used whenever possible however most prefer not to use the mouthpieces provided; (3) HCV and HIV prevention and treatment information needs to be provided with safer inhalation supplies; (4) dissatisfaction with service policies such as limiting the number of stems a person may receive per visit and hours of operation; (5) the need for 24 hour service access; (6) the need for improved drug treatment services, including lengthened treatment programs and follow up support for people upon discharge from treatment programs. In addition, all participants prioritized the need for stigma and discrimination sensitivity training and education about drug use for law enforcement officers and medical health professionals.

Conclusions: Emergent focus group findings identify the need for greater access to prevention programming and the need for greater awareness of crack use among health care providers. These themes will be followed up in detail through the second phase of this study comprising a series of in-depth personal interviews particularly among population groups such as men who have sex with men, sex workers, and trans people who may have differing considerations in terms of their crack-related health care prevention needs.

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DO NEEDLE EXCHANGE PROGRAMS (NEPS) DISTRIBUTE NEEDLES AND EQUIPMENT ACCORDING TO BEST PRACTICES?

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Plain Language Summary: NEPs are key components of HIV and hepatitis C prevention efforts for injection drug users (IDUs). The Ontario Needle Exchange Programs: Best Practice Recommendations, the only document of its kind in Canada, was released in 2006 to support program development and guide implementation of evidence-based service for IDUs. In this project, we sought to investigate whether NEPs follow best practices with respect to the distribution of needles and other equipment and to identify barriers to implementation.

The Challenge: To maximize uptake of best practices with respect to the distribution of needles, other injection equipment, and safer inhalation equipment, it is important to assess NEP activities and policies and identify modifiable barriers.

Our Approach: Using a community-based research approach, we surveyed 32 core NEP managers (100% response rate) and 62 satellite NEP managers (63% response rate) and asked them about their practices and policies in 2006 and 2008. We analyzed the data to measure the uptake of the Best Practice Recommendations and to determine the major reasons behind lack of implementation.

Key Findings: The majority of Ontario NEPs we surveyed reported following best practices with their needle distribution policies. Most core NEPs (88%, n=28) and satellite NEPs (84%, n=52) are distributing cookers today, considerably more programs than was the case two years ago. All core NEPs (100%, n=32) and nearly all satellite NEPs (97%, n=60) are distributing sterile water today, also higher than before. Although more programs are distributing safer inhalation equipment today compared to two years ago, the majority do not distribute these items and a higher proportion of satellite NEPs (44%, n=27) are distributing glass stems than the core NEPs (16%, n=5). Commonly cited implementation barriers included funding, senior management and political decision-making.

Impact on Policy and Practice: While encouraging, our findings suggest the need to address existing barriers to full implementation of the Best Practice Recommendations. Ensuring that NEP clients receive enough injection equipment as well as safer inhalation equipment has important implications for reducing risk and disease transmission. We recommend that the Mandatory Health Programs and Services Guidelines include a stipulation that NEPs must distribute all injection-related and safer inhalation equipment, and the development of a funding mechanism to ensure that the Ontario Harm Reduction Distribution Program (OHRDP) can distribute safer inhalation equipment.

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POSITIVE PREVENTION FOR GAY MEN IN CANADA: DISMOUNTING MISSIONARY POSITIONS

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Plain Language Summary: Research findings indicate that solid and ongoing conceptualization of the prevention approach, positive prevention, is required to effectively support its practice in nonprofit organizations, health delivery agencies, and private counseling practice.

The Challenge: Positive Prevention is placing the HIV-positive individual at the centre of all preventive efforts to affirm the positive in being HIV-positive and reducing the negative impacts of HIV (e.g., opportunistic infections, stigmatization). Although it is a topic of academic research interest, the results of research on positive prevention have not translated well into pragmatic prevention strategies in nonprofit organizations, health delivery agencies, and private counseling practice. There is still uncertainty about how HIV-positive individuals manage risk and how their ability to prevent the transmission of HIV is linked to their mental health and social circumstances. Our challenge was, and continues to be, on unraveling the apparent mystery of defining the elusive concept of positive prevention.

Our Approach: In HIV transmission, at least one HIV-negative person and one HIV-positive person are involved but they are not always engaged. We examined sexual risk-taking behaviour and change as a shared responsibility. In a scenario complicated by being unaware of HIV status or socially instigated silence, fear, stigma, and shame, our approach was to remain aware of constructs that are positive in risk-taking, such as self-acceptance and validation.

Key Findings: Through our examination of symbolic, corporeal, and social/structural spaces, a previous postulate that all gay men possess agency, albeit with varying frequency and intensity, and can really effect change was reaffirmed. However, the results also suggest that new ways of speaking about certain HIV-related concepts – stigma, blame, survivor's guilt, disclosure and sex criminality, the silent epidemic of loneliness and mental health, the seminal signifiers such as serosorting and seropositioning, and highly active antiretroviral therapy (HAART) as prevention – are required.

Impact on Policy and Practice: A review of the existing literature and the results of our research indicate that, despite a substantial increase in the last several years in the number of scholarly research efforts dedicated to positive prevention, the data and recommendations from the research have yet to translate into 1) a clearer understanding of how HIV-positive individuals manage risk, how their ability to prevent the transmission of HIV is linked to their mental health and social circumstances, and 2) recommendations for effectively incorporating positive prevention into pragmatic prevention strategies in nonprofit organizations, health delivery agencies, and private counseling practice.

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CLINICAL OUTCOMES FROM OPTIMA: A RANDOMIZED CONTROLLED TRIAL OF ANTIRETROVIRAL TREATMENT INTERRUPTION OR INTENSIFICATION IN ADVANCED MULTI-DRUG RESISTANT HIV INFECTION

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Plain Language Summary: OPTIMA is a tri-national clinical trial that compared the effect of receiving standard anti-HIV drug treatment versus more intensified treatment, and of interrupted versus continued treatment, on the health and survival of adults with advanced and multi-drug resistant HIV disease. We studied 368 adults between 2001 and 2006 and followed them for an average of 4 years to the end of 2007, with careful prophylaxis of opportunistic infections. We identified no benefit or harm of any particular treatment strategy.

Objective: In multi-drug resistant HIV/AIDS patients, to compare standard antiretroviral (ARV) therapy (four or fewer drugs) to a mega ARV regimen (five or more drugs), and an ARV treatment interruption to continuation, for time to an AIDS event or death, a non-HIV serious adverse event, and improved virologic, immunologic, and health-related quality of life (HQOL) outcomes.

Methods: Patients with 2 or more ART failures, viral load (VL) >2,500 copies/mL on ART, CD4+ cells <300/mm³, were factorial-randomized to (a) a 3-month ART interruption vs. continuation, and to (b) mega-ART (5 or more drugs) vs. standard ART (4 or fewer drugs). The primary composite outcome was time to AIDS or death. Serious adverse events (SAE) were reviewed for attribution to HIV or ART.

Results: 368 patients were randomized between 2001 and 2006 and followed for an average of 4 years to the end of 2007. At baseline, the mean age was 49 years; 2% were women; median CD4 was 110 cells/mm³; mean log₁₀ VL was 4.71 copies/ml; and 59% had prior AIDS diagnosis. In 1249 person-years (PY) of observation, 3.5% of patients were lost to follow-up. During ART interruption, expected changes in CD4 and VL were seen. There were no statistically significant differences in the composite outcome of AIDS or death or in SAE between treatment strategies.

	Intensification		Interruption*	
	Mega-ART vs. Standard		Interruption vs. Continuation	
Number of patients*	176	192	164	175
First AIDS event	51	46	34	58
Death	61	67	61	62
AIDS or death (Rate/100 PY)	82 (15.1)	82 (13.9)	69 (13.9)	87 (15.7)
HR (95% CI)	1.19 (0.87, 1.62)		0.94 (0.68, 1.30)	
First non-HIV SAE	86	95	80	92
HR (95% CI)	0.82 (0.60, 1.13)		1.33 (0.96, 1.84)	

*29 patients in the U.K. were randomized only to Intensification options

Conclusions: Management options of treatment interruption or not and of intensification or not resulted in similar long-term clinical outcomes in patients with advanced HIV disease and multi-drug resistant HIV infection.

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PERSISTENT HIV RNA SHEDDING IN SEMEN AFTER THE INITIATION OF EFFECTIVE ANTIRETROVIRAL THERAPY.

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Plain Language Summary: Semen is the most common mode of HIV transmission, but the impact of effective highly active antiretroviral therapy (HAART) (an undetectable blood viral load on therapy) on semen virus levels is incompletely understood. We studied the effect of starting HAART on HIV levels in the blood and semen. Although effective HAART reduced HIV semen levels substantially, isolated semen shedding was observed in almost half of participants, often at high levels. Semen viruses were infectious but did not show evidence of drug resistance.

Objective: Prospectively evaluate the impact of starting HAART therapy on semen HIV RNA levels.

Methods: A prospective, longitudinal study of semen and blood HIV RNA levels in participants initiating HAART. Simultaneous blood and semen samples were collected at weeks 0, 2, 4, 8, 12, 16, 20 and 24. Effective HAART was defined as the achievement of an undetectable blood viral load; high-level semen shedding was defined as an HIV RNA level >5,000 copies/ml.

Results: Twenty-one participants were enrolled, and the blood viral load was undetectable in all cases by week 16. Isolated semen HIV RNA shedding was detected in 10/21 (48%) participants despite effective HAART, and at a high level in 3/21 (14%). Overall, isolated semen shedding was detected at 16/92 (17.4%) visits with an undetectable blood viral load. The pre-therapy semen viral load, but not the blood viral load or other clinical parameters, was independently associated with isolated semen shedding. Semen isolates did not contain drug resistance mutations, and were infectious.

Conclusions: Although effective HAART eliminated HIV RNA from the semen of most participants, high levels of drug-sensitive and infectious HIV were detected intermittently in a significant proportion. Public health policy and individual level counseling must be tailored carefully to reflect this reality.

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COMBINATION ANTIRETROVIRAL THERAPY IN A CONFLICT-AFFECTED POPULATION: OUTCOMES FROM A LARGE COHORT IN NORTHERN UGANDA

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Plain Language Summary: International guidelines have provided disparate guidelines on providing combination antiretroviral therapy (cART) in conflict-affected populations. As a consequence, HIV-positive individuals in clinical need of treatment in these settings have had limited access to cART. We measured the clinical and immunological outcomes of 1,625 HIV-positive adults receiving cART in a conflict-affected population of Northern Uganda. We found that patients in this setting had mortality rates comparable to those in peaceful, low-resource settings, and had adherence rates better than those found in high resource settings. Our study highlights that HIV treatment is feasible and imperative in conflict affected populations.

Objective: We aimed to measure the clinical and immunological outcomes of 1,625 HIV-positive adult patients receiving cART in conflict affected northern Uganda.

Methods: We conducted a prospective cohort study of 1,625 adults (>14 years) receiving cART in Gulu District, Northern Uganda. Our primary outcome was all-cause mortality. We calculated mortality incidence per 100-person years. We assessed the impact of CD4 status at initiation and adherence on mortality using the Kaplan-Meier method. We applied a Cox-proportional Hazards measure to measure the impact of covariates (ie. sex, age, CD4 count at initiation, adherence, TB at initiation, duration of treatment, and internally displaced person status) on mortality.

Results: Sixty-nine (4.2%) patients died during follow-up. The mortality incidence rate was 3.48 per 100 person years (95% CI, 2.66-4.31). Patients initiated treatment with a median CD4 count of 157 cells (IQR 90-220); the majority (63%) had WHO stage 2 defined illness. Sixty-two patients had pulmonary TB at initiation. Of the 1521 patients with adherence data, 118 (7.7%) had adherence < 95% and 1403 (92.2%) had adherence ≥95%.

Conclusions: Patients receiving cART in conflict-affected northern Uganda had a mortality rate that is comparable to that of peaceful, low-income settings, and better adherence than patients in higher income settings. These favorable findings highlight the need to expand cART access in populations affected by armed conflict.

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PERSONALIZED PHARMACOTHERAPY BIOMARKERS FOR THE ABACAVIR-INDUCED HYPERSENSITIVITY SYNDROME

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Plain Language Summary: Adverse reactions to drugs are a major problem for individuals infected with human immunodeficiency virus (HIV). Drug-induced hypersensitivity reactions (HSR) are associated with significant morbidity and mortality. In the general population HSRs occur 1 in 10,000 cases while in HIV this event is 100 times more commonly. Individuals living with HIV have an innate predisposition to develop HSRs and are exposed to a large number of drugs. HSRs have been associated with anti-retrovirals such as abacavir, a nucleoside analogue reverse transcriptase inhibitor as well as with non-nucleoside reverse transcriptase inhibitors (NNRTIs). Allelic association between two markers HLA-B57-positive cases and tumor necrosis factor (TNF) alpha -238A carriers indicates possible genetic predisposition. There are many potential causes of impaired mitochondrial function in HIV infection. Nucleoside analogue reverse transcriptase inhibitor (NRTI) class of anti-retrovirals are known to inhibit human DNA polymerase. Depending on the specific type of NRTI depletion of mitochondrial DNA can occur to various degrees leading to mitochondrial toxicity. Mitochondrial toxicity caused by abacavir contributes to the increased rate of unexpected drug reactions in HIV infected individuals.

Objective: We aimed to validate invitro lymphocyte toxicity (LTA) to abacavir based upon a specific mitochondrial marker (succinate dehydrogenase). In addition, we aimed to measure the differences between the HIV infected individuals that did not have a clinical HSR to the drug versus the individuals that presented such a reaction.

Methods: We studied in 6 HIV-HSR cases and 20 controls living with HIV, under the same medication that did not present an adverse reaction. All the patient participated at the study providing their informed consent. LTA was performed in each individual and TNF was measured in their serum

Results: Statistically increased toxicity to reactive drug metabolites is seen in individuals that presented positive clinical-reaction ($p < 0.05$). TNF levels in serum were statistically higher in individuals that presented HSR versus the individuals that did not present HSR ($p < 0.05$)

Conclusions: The mitochondria and immune system plays an important role in HSR in people treated for HIV. The screening of patients prior to institution of therapy with drugs associated with these potentially severe life-threatening reactions is an important tool for the physicians and their patients.

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A HEALTH AND HUMAN RIGHTS IMPERATIVE: THE CASE FOR PRISON-BASED NEEDLE AND SYRINGE PROGRAMS

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Plain Language Summary: Prison-based needle and syringe programs (PNSPs) are one means of reducing prisoners' vulnerability to HIV and hepatitis C (HCV) infection, yet Correctional Service Canada (CSC) has taken no steps to ensure that prisoners in federal institutions have access to sterile injecting equipment, contrary to international health and human rights standards and federal correctional legislation.

The Challenge: In Canada and many other countries, HIV and HCV prevalence in prison populations is much higher than in the general population. Because of the scarcity of needles and syringes in prison, people who inject drugs in prison are more likely to share injecting equipment than people in the community, thereby increasing the risk of contracting HIV and HCV.

Our Approach: The best available evidence strongly suggests that in countries where PNSPs exist, such programs reduce risk behaviour and disease, do not increase drug consumption or injecting, do not endanger staff or prisoner safety, and have other positive outcomes for prisoners' health. To complement the existing evidence from evaluations of PNSPs worldwide, a legal analysis based on federal correctional legislation and international health and human rights standards was undertaken.

Key Findings: Federal correctional legislation requires CSC to provide prisoners under its jurisdiction with essential health care that conforms to professionally accepted standards, and also recognizes that prisoners retain the rights and privileges of all other members of society except those limited as a necessary consequence of incarceration. Under international law, the right to the highest attainable of health includes the right to preventive health service while the right to life obligates states to take positive measures to eliminate epidemics. Further, the principle of equivalence, reflected in federal correctional legislation and affirmed by international law and various health and human rights bodies, entitles prisoners to access HIV prevention services equivalent to those available in the community. In Canada, needle and syringe programs (NSPs) have operated in the community for years as a well-documented and proven measure to reduce HIV infection and prevent other harms associated with injection drug use. Therefore, CSC's failure to implement NSPs in prisons contravenes the principle of equivalence, violates international health and human rights standards and is inconsistent with federal correctional legislation.

Impact on Policy and Practice: In light of (i) the availability of NSPs in the community, (ii) the principle that prisoners retain all rights except those necessarily limited by incarceration, and (iii) the principle of equivalence, CSC should implement multi-site pilot PNSPs in federal prisons.

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HARD TIME: PROMOTING HIV AND HEPATITIS C PREVENTION PROGRAMMING FOR PRISONERS IN CANADA

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Plain Language Summary: We reviewed HIV and hepatitis C virus (HCV) prevention policies and programs in prisons across Canada and identified "enabling policies" and "best and promising programs" as well as significant gaps in coverage of both policies and programs.

The Challenge: In Canada, HIV and HCV prevalence is much higher among prisoners than among the general population. While prisoners retain all human rights except those limited as a necessary consequence of incarceration, prisoners are not always provided with health care, including HIV prevention services, which are equivalent to those available in the community.

Our Approach: We visited federal and provincial prisons and interviewed prisoners, prison staff and administration, and community organizations, gathering information on HIV and HCV prevention projects and initiatives and documenting their objectives and main activities, outcomes and lessons learned, limitations and funding support. We reviewed prisons' HIV and HCV prevention and harm reduction policies and programs, focusing on HIV testing and counseling; condoms, dental dams, and lubricant; bleach to clean needles; methadone maintenance therapy; urine testing for illicit drugs; drug-free living units; education and information for prisoners; and special programs for women, Aboriginal people and youth in prisons.

Key Findings: 20 "enabling policies" and 30 "best and promising programs" from prison systems across Canada were identified. HIV and HCV prevention efforts are strengthened when public health personnel working in prisons have greater autonomy and collaborate with prison administration and correctional staff. Still, there are frequent gaps between policy and practice, and significant gaps in coverage of both policy and programs. In particular, no Canadian prison system provides prisoners with access to sterile injecting and tattooing equipment.

Impact on Policy and Practice: Enabling policy for HIV and HCV prevention, including harm reduction programs, should be in place in every prison system and made available to all prisoners regardless of gender, ethnicity, culture, gender identity, sentence or province of imprisonment. 6 strategic directions for action to promote best practice in HIV and HCV prevention and harm reduction in prison are: 1) identifying leaders with legal responsibility for prisoners' well-being; 2) engaging responsible organizations and people, including prisoners, with a mandate to protect public health, including prisoners' health; 3) agreeing on best policy and practice for HIV and HCV prevention and harm reduction in prisons; 4) identifying barriers to HIV and HCV prevention and harm reduction in prison; 5) undertaking policy and program reviews to implement new, or enhance existing, policies and programs; and 6) externally monitoring and evaluating these policies and programs on an ongoing basis.

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COMPARING ACCESS TO FERTILITY INVESTIGATIONS AND TREATMENTS FOR HIV-POSITIVE INDIVIDUALS AND COUPLES BETWEEN ONTARIO AND THE REST OF CANADA

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Plain Language Summary: A significant proportion of HIV-positive individuals and couples wish to have children, and they may need medical assistance to do so, either because of fertility issues or to reduce transmission risk between partners. Access to fertility clinics and services may be limited in Canada for this group of people.

The Challenge: To compare the types of fertility investigations and treatments that are available in fertility clinics in Ontario and across Canada for couples in which one or both partners are HIV-positive.

Our Approach: A survey was sent to all fertility clinics in Canada by email or fax. The survey contained questions regarding the availability of services (investigations and treatment) for HIV-positive single and coupled men and women for infertility and/or risk reduction in achieving pregnancy. Non-responders were re-contacted twice.

Key Findings: Completed surveys were received from 12 of 14 (86%) clinics in located in the province of Ontario, and 23 of a total of 28 (82%) clinics in 8 provinces across Canada. 5/23 (22%) clinics reported being unwilling to see HIV-positive individuals, and 4 of these were located in Ontario (4/12, 33%). In Ontario, fifty percent (6/12) of clinics had seen at least one HIV-positive male or female within the previous year, while 12/23 (52%) clinics across Canada had. Clinics in every province were willing to offer infertility investigations, with this service available in 9/12 (75%) of Ontario clinics. Clinics located in six provinces (including Ontario) were willing to offer fertility treatments if either or both partners were HIV-positive. 8/23 (35%) clinics (5/14, 36% in Ontario) would offer any combination of treatment, with the most common available treatment being intrauterine insemination for couples in which the female partner was HIV-positive (12/23, 52%). In Ontario, 3/14 (21%) clinics would perform sperm washing for couples in which the male partner was HIV-positive, 6/14 (43%) would perform intrauterine insemination for couples in which the female partner was HIV-positive, 3/14 (21%) clinics would perform in vitro fertilization, and 6/14 (43%) clinics would offer donor sperm to single HIV-positive females. A smaller number of clinics were willing to offer risk reduction techniques in achieving pregnancy if either or both partners were HIV-positive.

Impact on Policy and Practice: In this national survey of fertility clinics across Canada, the availability of investigations and treatments for HIV-positive individuals and couples was regionally dependent and limited, but was similar when comparing Ontario with the rest of Canada. Policy makers and health care providers caring for HIV-infected men and women should focus on strategies to increase access.

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SCOPING THE FIELD: IDENTIFYING KEY RESEARCH PRIORITIES IN HIV AND REHABILITATION

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Plain Language Summary: We conducted a literature review followed by a series of focus groups and key informant interviews with stakeholders to identify key research priorities in HIV and rehabilitation. Six top priorities were identified that highlight areas where future research should be conducted: 1) disability and episodic disability, 2) concurrent health conditions living with HIV, 3) HIV and the brain, 4) labour force and income support, 5) access to and effect of rehabilitation, and 6) development and evaluation of outcome measurement tools.

Objective: To identify key research priorities related to HIV and rehabilitation that will advance policy and practice for people living with HIV in Canada.

Methods: We conducted a review of published and grey literature to identify strengths and gaps in HIV and rehabilitation research followed by 2 focus groups and 10 key informant interviews with 28 stakeholders including people living with HIV, researchers, educators, clinicians, and policy makers across Canada. We asked participants their thoughts and perspectives on research priorities in HIV and rehabilitation. All discussions were audio taped and transcribed verbatim. We analyzed data using a qualitative content analysis to identify key emergent themes that related to research priorities in HIV and rehabilitation.

Results: The resulting Framework of Research Priorities in HIV and Rehabilitation highlighted three overlapping research priorities related to: a) living with HIV across the lifespan (aging with HIV, concurrent health conditions, changing outlook over time), b) disability (impairments, activity limitations and participation restrictions), and c) rehabilitation (access to services, effect of rehabilitation interventions, and impact of education of health care providers) that should be viewed through environmental and/or personal contextual lenses, using different methodological approaches. Six key research priorities from this framework were identified through additional consultation with new and returning participants including: 1) disability and episodic disability, 2) concurrent health conditions living with HIV, 3) HIV and the brain, 4) labour force and income support, 5) access to and effect of rehabilitation, and 6) development and evaluation of outcome measurement tools.

Conclusions: Despite increasing evidence in this field, there is a need for future research in the area of HIV and rehabilitation. Six key priorities for HIV and rehabilitation research were identified through a collaborative scoping review process that integrated perspectives of multiple stakeholders in the field. These priorities inform a future plan for HIV and rehabilitation research that may increase our knowledge to collectively enhance future practice, programming and policy for people living with HIV.

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HIV TESTING PATTERNS IN TORONTO'S EAST AFRICAN COMMUNITIES: RESULTS FROM EAST

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Plain Language Summary: The East African Health Study in Toronto (EAST) was the first large-scale Canadian survey of HIV among people from African countries. We asked participants about their HIV testing history, knowledge of testing, and reasons for not testing. Although almost half of all participants have tested because of immigration policies, there are still gaps in knowledge concerning HIV testing in Canada. Of particular concern are those who have not tested because they feel 'healthy'.

Objective: To determine HIV testing patterns and reasons for not testing in Toronto's East African communities.

Methods: During 2004-2006, we conducted 456 surveys with persons from five East African (Ethiopian, Kenyan, Somali, Tanzanian, and Ugandan) communities in the Greater Toronto Area. Participants were recruited through member lists from community organizations and recruitment outreach activities. Univariate and bivariate analyses were used to characterize HIV testing patterns, knowledge of testing, and reasons for not testing.

Results: Almost all (94%, 428/456) participants felt that HIV testing was 'very important', however only 75% (340) reported ever having been tested for HIV. More men had tested than women (83% v 71%, p=0.003). Of those whose physician recommended a test (n=89), 98% reported testing. Of those who tested, 66% (223) have tested for immigration purposes. The mean number of tests was 2.8 (median 2, range 1-20) and over half (55%, 187) had tested recently (from 2004 to 2006). Of those who never tested (30%, n=101) 69% believed they had to provide their name to get tested and 30% did not know where to get a test in Canada. The main reasons for not testing were: 'felt healthy' (83%); 'didn't think I was at risk' (79%); and 'never thought about getting tested' (66%).

Conclusions: While immigration policies have resulted in many people being tested for HIV, and study participants acknowledged the importance of HIV testing, it also appears that some lacked knowledge concerning why and how to access routine/diagnostic testing in Canada. Physician recommendations to test seem to have been accepted. Of particular concern are persons who have not tested because they felt 'healthy', signifying a need to increase awareness that one can be infected and transmit to others even when symptom-free.

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IN OUR OWN WORDS: SYSTEMIC AND INSTITUTIONAL RESPONSES TO HIV STIGMA AFFECTING AFRICAN AND CARIBBEAN COMMUNITIES IN ONTARIO

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Plain Language Summary: HIV stigma emerges from and reinforces prevailing systems of oppression and relations of dominance. Therefore, efforts to reduce stigma require coordinated action from policy makers, institutions and affected communities that address the experiences of those communities and promote social justice.

The Challenge: Research on HIV stigma and efforts to reduce stigma often overlook the systemic or structural sources of stigma, focusing instead on individual attitudes, beliefs and behaviours. The Stigma Study of African and Caribbean communities in Toronto demonstrated the crucial role of systemic factors such as racism, homophobia and economic marginalization in reproducing stigma and discrimination. Based on the study findings, ACCHO undertook to develop strategies and actions to address the systemic and institutional sources of stigma. Consistent with its commitment to community engagement, ACCHO designed a process to identify strategies and actions based on the experiences and expertise of the research participants, stakeholders from the African and Caribbean communities, service providers who work with those communities, and policy makers.

Our Approach: In 2004-2006 a team led by researchers from the University of Toronto and ACCHO conducted the HIV Stigma Study to understand experiences of and responses to HIV stigma among African and Caribbean communities in Toronto. 104 people from Africa and the Caribbean participated in indepth interviews and focus groups, which included discussion of how to reduce stigma. At the conclusion of the study, ACCHO organized two forums for service providers, policy makers and community stakeholders (200 participants) to discuss the study findings and identify strategies and actions to address HIV stigma. Participants in the forums were asked to identify (a) specific sources or dimensions of stigma, (b) required actions or strategies, (c) who should be responsible, (d) how the strategy or action may be implemented, (e) why the action or strategy merits consideration, and (f) anticipated outcomes.

Key Findings: The Stigma Study and stakeholder consultation generated strategies and actions in six crucial areas: (a) anti-racism and anti-oppression, (b) program funding, (c) engaging faith communities, (d) mobilizing communities, (e) recognizing and valuing people living with HIV/AIDS (PHAs), and (f) engaging the media. Responsibility for addressing stigma affecting African and Caribbean communities resides with government, funding agencies, faith leaders, service providing agencies, PHAs, community leaders and the media.

Impact on Policy and Practice: Strategies and actions to reduce HIV stigma affecting African and Caribbean communities in Ontario articulate a framework for policy and institutional practice that is informed by research and grounded in community experience, engagement and action.

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KNOWLEDGE AND ATTITUDES OF HEALTH AND SOCIAL SERVICE PROVIDERS ABOUT IMMIGRANT, REFUGEE AND NON-STATUS PEOPLE WITH HIV/AIDS IN CANADA

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Plain Language Summary: Immigrants, refugee and non-status people living with HIV/AIDS (IRN-PHAs) face complex barriers in accessing needed services to address the social determinants to mental and physical health. Committee for Accessible AIDS Treatment conducted research study involving a component of knowledge and attitude survey of 66 multidisciplinary service providers including vignettes describing three IRN-PHAs facing multiple stressors. Our study found that some providers were unable to identify common mental health problems. The knowledge deficit and attitudinal disposition may contribute barriers to providing care and can inform interventions to improve service access.

The Challenge: Toronto is one of the most ethnically diverse cities in the world, where almost half of Canada's immigrant and refugee settle. However, immigrant, refugee, and non-status PHAs (IRNPHA) face multiple barriers in accessing information or other HIV/AIDS health and mental health services. We conducted a survey to elicit service providers' attitudes about HIV/AIDS and perceived barriers to providing services.

Our Approach: We recruited a purposive multidisciplinary sample of service providers who were actively involved in at least two of three service sectors – HIV/AIDS, immigration and settlement, or mental health. The survey included demographic information and vignettes describing three IRNPHAs dealing with various stressors. They include an HIV positive transgender person with depressive symptoms and an HIV positive couple, with the man suffering from psychotic symptoms and the woman from depressive symptoms. Respondents were asked to evaluate and rank the likelihood of a list of potential causes of symptoms, state their preferred interventions, and evaluate attitudinal statements.

Key Findings: Sixty-six service providers completed the survey, including 36 female, 27 male and 3 transgender. While the majority reported "somewhat" to "very comfortable" in handling the cases, only about two-thirds reported having sufficient knowledge. On preliminary analysis, 51.6% and 38.1% identified "clinical depression" as the most likely cause for the two depressed cases. For the psychotic case, "complications of HIV" and "psychosis" were identified by 46.9% and 21.9% of the sample respectively. In all cases, a few endorsed "consequences of bad behaviors" as a "somewhat likely" cause or as one of the three most likely causes.

Impact on Policy and Practice: Results of the survey suggests that some but not all service providers are able to identify common mental health syndromes. Furthermore, knowledge deficits and attitudinal dispositions may contribute to barriers to providing care.

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MENTAL HEALTH SERVICE ACCESS BARRIERS FOR IMMIGRANT, REFUGEE AND NON-STATUS PEOPLE WITH HIV/AIDS IN CANADA: CONTRASTING PERSPECTIVES BETWEEN SERVICE USERS AND SERVICE PROVIDERS

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Plain Language Summary: Immigrants, refugees, and non-status people living with HIV/AIDS (I/R/N-PHAs) in Canada have complex psychosocial needs and face profound barriers when accessing mental health services. Our study involving 47 newcomer PHAs and 103 service providers identified varied perspectives from IRN-PHAs and service providers. PHA identified barriers centered around stigma and discrimination on their immigration status, fragmentation of services and lack of cultural competency of existing services. Provider identified barriers centered around stigma and taboo against mental health, lack of specialized knowledge and lack of resource and systemic support from institutions. To address these complex realities a comprehensive strategy involving collaboration amongst different stakeholders is critically needed.

The Challenge: Immigrants, refugees, and non-status people living with HIV/AIDS (I/R/N-PHAs) in Canada have complex psychosocial needs and face profound barriers when accessing mental health services. The Committee for Accessible AIDS Treatment (CAAT) undertook participatory action research in 2006 to understand the needs and to identify strategies to improve mental health service access for I/R/N-PHAs.

Our Approach: Our study collected data on 47 I/R/N-PHAs from East Asian, South Asian, African, Caribbean and Spanish Speaking communities in Toronto (14 female (30%), 32 males (68%), 1 transgendered (2%)) and 103 service providers (62 female, 38 male and 3 transgendered) through focus groups, individual interviews, and surveys to identify access barriers, service gaps and best practice strategies. The data were then rated and sorted by 21 PHAs (6 female (29%) 15 males (71%)) and 6 researchers using Concept Mapping software to generate and identify key domains of best practices in providing mental health services for I/R/N-PHAs.

Key Findings: The study identified varied perspectives from IRN-PHAs and service providers. PHAs identified barriers included stigma and discrimination from service providers on their HIV and immigration status, language barriers, fragmentation of services and limitation of western psychiatric services in addressing their cultural reality. Health service providers highlighted barriers related to cultural stigma and taboo against mental health, lack of specific knowledge about HIV & immigration, government funding restriction on services, and lack of systemic support from their institutions.

Impact on Policy and Practice: Barriers in accessing mental health services for I/R/N-PHAs are complex and the result of multiple factors related to individual PHAs, service providers, institutional policies, cultural beliefs, government funding structure and systemic discrimination. Improvement of I/R/N-PHA mental health requires a comprehensive strategy that involves all stakeholders to collaborate to address the social and political determinants of health and eliminate inequities in order to create an accountable and responsive health system.

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