Viral and Host Factors/Pathogenesis

O001
UNLIKE PRIMARY MONOCYTES, HUMAN MONOCYTE DERIVED MACROPHAGES ARE RESISTANT TO HIV-VPR-INDUCED APOPTOSIS

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INTRODUCTION: Latently infected cells represent the main barrier to curing HIV infection and a unique therapeutic challenge. Memory CD4+ T cells and macrophages are the major viral reservoirs; however, persistently infected macrophages are not susceptible to the HIV cytophatic effects typical of infected CD4+ T lymphocytes and their numbers do not decrease, suggesting that the viral infection deregulates the cellular apoptotic machinery to selectively promote the survival of infected macrophages. The role of Bcl2 and IAPs (inhibitors of apoptosis), the main families of antiapoptotic proteins, in macrophage resistance during HIV infection is not established and has been addressed in this report by using the HIV accessory protein Vpr as a study model for apoptosis.
HYPOTHESIS: Differentiation of monocytes towards a macrophage phenotype changes their susceptibility to Vpr induced apoptosis through the upregulation of antiapoptotic molecules.
RESULTS: MDMs unlike primary monocytes and human monocytic cell line THP-1 are resistant to Vpr apoptosis. The level of antiapoptotic Bcl-XL protein increases throughout monocyte to macrophage differentiation. Treatment of macrophages with Vpr induced no change in the levels of Bcl-XL, but decreased the expression level of other two antiapoptotic proteins, XIAP and cIAP2, with no effect on cells' viability. Furthermore, attenuation of BCl-XL significantly enhanced Vpr-induced apoptosis in MDMs suggesting that Bcl-XL may play a critical role for the development of resistance against Vpr induced apoptosis.
CONCLUSIONS: Although the mechanisms are still being investigated, this is the first report about macrophage resistance to Vpr induced apoptosis. This result is particularly significant as the originating primary monocytes are sensitive to Vpr effect, but they lose this responsiveness as they differentiate into macrophages. The specific modulation of the apoptotic pathway provides insight into the possible explanations for viral reservoirs persistence and may contribute to the establishment of new therapeutic approaches that would target antiapoptotic genes.

O002
CHARACTERIZATION OF ANTI-HIV ACTIVITY MEDIATED BY HIV-1 INTEGRASE C-TERMINAL DOMAIN POLYPEPTIDE EXPRESSED IN SUSCEPTIBLE CELLS

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HIV-1 integrase (IN) is not only a key molecule for HIV genomic integration, but also plays important role in other steps of HIV-1 replication, including reverse transcription, viral cDNA nuclear import, chromatin targeting, virus release and maturation. In this study, we investigated whether the expression of HIV-1 IN C-terminal domain (CTD) alone in the susceptible cells could affect virus replication. We found that the expression of T7-INcwild type (WT) and mutation T7-INc215,9AA in virus-producing cells decreased HIV-1 infectivity about 3-4 folds in HeLa-beta-Gal cells and CD4+ MT4 cells. We further observed that the Pr55gag processing in progeny viruses was largely inhibited in the viruses produced from cells that expressed the IN CTD. By using a VSV-G pseudotyped lentiviral vector system, we established the CD4+C8166 T cell line which stably express either T7-INcWT or T7-INc215,9AA and demonstrated that both cell lines become resistance to HIV-1 infection. Results from HIV-1 one-cycle infection and the real-time quantitative PCR (RQ-PCR) assays also revealed that the expression of IN CTD reduced HIV-1 cDNA integration and lead to a moderate inhibition of incoming virus infection. All together, the expression of HIV-1 IN CTD alone can inhibit virus replication by impairing virus maturation and reducing viral cDNA integration into chromatin DNA, thus providing evidence for the development of a new strategy to combat against HIV infection.

O003
IDENTIFICATION OF SEQUENCE VARIATIONS IN THE PEPTIDASE INHIBITOR 3 (PI3) GENE OF 48 WOMEN IN THE PUMWANI SEX WORKER COHORT USING 454 SEQUENCING TECHNOLOGY

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BACKGROUND: Elafin, a 6 kD serine protease inhibitor encoded by peptidase inhibitor 3 gene, is significantly overexpressed in cervical-vaginal lavage samples of HIV-1 resistant sex workers in the Pumwani Cohort. It has been demonstrated that Elafin is able to inhibit the replication of T cell trophic HIV-1 virus under physiological conditions. Genetic variations may contribute to the differential expression of Elafin in HIV-1 resistant sex workers. To investigate the role of polymorphisms in the PI3 gene and flanking genomic regions on Elafin expression, more than 16kb of genomic sequences was analyzed.
METHODS: Genomic DNA was isolated from whole blood of 48 women with different levels of Elafin expression from the Pumwani Sex Worker Cohort. The Expand Long PCR System (Roche) was used to amplify two overlapping, 9kb DNA fragments of the PI3 gene and flanking genomic regions (>16kb). The PCR products were purified and sequenced using the Genome Sequencer FLX™ (Roche). The sequence reads were assembled and aligned to the reference sequence with Sequencher 4.8. Sequence variants were catalogued and data analysis was conducted with SPSS 13.0.
RESULTS: A total of 118 SNPs were identified within this 16kb region of the genome. Of these, 60 SNPs were novel. The SNP (rs1011536) at –10194A >G and insertion at –1908_–1909insTATAA (p=0.048;OR:–.025; 95%CI:0.066-0.942) were negatively associated with HIV-1 resistant women. Novel SNP, –9169G >T (p=0.022;OR:0;95%CI:0.631-0.971) and +2372A >C (p=0.05;OR:0;95%CI:0.685-0.996) were negatively associated with high expression of Elafin. In addition, SNP –338G >A (rs62208416) was located in the nuclear factor-κB (NF-κB) binding site in the Elafin promoter region.
CONCLUSION: This explorative study identified 60 novel SNPs and showed that the PI3 gene and surrounding genomic sequences in this cohort were more polymorphic when compared to the reference sequence. The association of the sequence variants identified in this study with expression level of Elafin and HIV resistance needs to be confirmed in the large population of the Pumwani Sex Worker Cohort.

O004
HIV-1 PROVIRAL HYPERMUTATION ASSOCIATES WITH INCREASED CD4 COUNTS IN HIV INFECTED KENYAN WOMEN

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APOBEC3F and APOBEC3G are important innate immune molecules that cause HIV-1 hypermutation, which can result in detrimental viral genome mutations. The Vif protein of wildtype HIV-1 counteracts APOBEC3F/G activity by targeting the proteins for degradation and inhibiting their incorporation into viral particles. A relationship has been proposed between APOBEC3F/G and HIV disease progression. We hypothesized that hypermutation could be identified in a cohort of HIV-infected subjects from Nairobi, Kenya and that this hypermutation could be correlated with clinical measures of HIV disease progression.
Proviral DNA was isolated from 240 Kenyan women infected with HIV-1 from a high risk commercial sex worker cohort, as well as a lower risk group, and used as a template for sequencing the vpu gene and the first 349 nucleotides of env. Plasma RNA of this region and proviral vif was additionally sequenced for a subset of patients. The resulting sequences were examined for hypermutation. Where available, CD4+ cell count was determined.
Thirteen highly hypermutated proviral vpu/env sequences were identified. Sequences derived from plasma virus, however, lacked hypermutation, as did proviral vif. When examining correlates of disease progression, subjects with hypermutated provirus were found to have significantly higher CD4 counts compared to the other subjects (p = 0.0052). Furthermore,

hypermutation as estimated by elevated adenine content positively correlated with CD4 count for all the study subjects (p = 0.042). The sequence context of the observed hypermutation was statistically associated with APOBEC3F/G activity.
In contrast to previous studies, this study demonstrates that higher CD4 counts correlate with increased hypermutation in the absence of obvious mutations in the APOBEC inhibiting Vif protein. This strongly suggests that host factors such as APOBEC3F/G are playing a protective role in these patients, modulating viral hypermutation and host disease progression. These findings support the potential of targeting APOBEC3F/G for therapeutic purposes.

O005
WITHDRAWN

O006
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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BACKGROUND: We have previously shown soluble HIV Tat protein down regulates expression of the IL-7 receptor α-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. 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 μg/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. Proteosome 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.

Methodological Issues and Capacity-Building in Epidemiological and Prevention Research

O007
FIELDWORK CHALLENGES AND LESSONS LEARNED FROM A CANADA-SOUTH AFRICA HIV PREVENTION RESEARCH PARTNERSHIP

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BACKGROUND: The value of collaborative international research for addressing global public health challenges is increasingly recognised. However, little has been written about lessons learned regarding fieldwork to help guide future collaborative efforts. The objective of this presentation is to reflect upon the fieldwork challenges of a research partnership between two Canadian universities, a South African university and a South African faith-based organisation, evaluating a school-based HIV prevention programme for adolescents in a peri-urban, resource-deprived settlement in Durban.
METHODS: Through a retrospective evaluation we identified the seven most significant fieldwork-related challenges that arose during our study. Our fieldwork consisted of a survey administered to 809 Grade 11s across four schools, and 11 focus groups conducted with learners, parents, teachers and programme facilitators. For each challenge we recorded plans made prior to fieldwork, unforeseen difficulties faced on the ground, potential undesirable consequences and lessons learned.
RESULTS: The seven challenges were: 1. Ensuring high quality translation of key documents; 2. Recruiting fieldwork research assistants (RAs) with appropriate skill sets; 3. Providing appropriately individualized training for RAs; 4. Managing the unpredictable; 5. Minimizing role confusion; 6. Anticipating unintended effects of incentives; 7. Dealing with disclosure of abuse and violence. The common theme is that of reconciling a structured and reasoned 'desk' planning process with the more fluid and unpredictable on-the-ground reality of conducting fieldwork. This concern is particularly salient in contexts that are less familiar to researchers and/or where poverty, violence and disruptions are 'normalised', and requires 'planning' for the unexpected.
CONCLUSION: Fieldwork is unpredictable, but challenges can be minimized in collaborative research through meaningful partnership. Our concerns would have been far greater without the on-the-ground collaboration of Northern researchers and strong involvement of Southern partners in the planning process. Sharing practical lessons learned from the field can prove a useful resource for researchers and practitioners.

O008
WHO PROVIDES BIOLOGIC SPECIMENS FOR HIV PREVALENCE RESEARCH? COMPARISON OF PROVISION IN TWO CROSS-SECTIONAL STUDIES OF MEN WHO HAVE SEX WITH MEN IN ONTARIO

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OBJECTIVES: Two cross-sectional studies undertaken at different points in time, collected different biological specimens for subsequent testing for HIV, HCV and other STI's. This analysis compares the rates of provision of the two different specimens, and explores variables associated with the provision of each.
METHODS: The Ontario Men's Survey (OMS) in 2002 and M-Track (Lambda) in 2007 collected data from MSM in Toronto and Ottawa. Saliva was collected in OMS and dried blood spots (DBS) in Lambda. Univariate and multivariate regression analyses were undertaken to identify variables associated with specimen provision in each study.
RESULTS: In OMS, 70.3% of men provided saliva, whereas 44.9% provided a DBS in Lambda. Recruitment venue was the only variable associated with specimen provision in both studies. In OMS men recruited in bathhouses (OR=0.55) were less likely to provide saliva. In Lambda, men recruited in bars (OR=0.35) and bathhouses (OR=0.55) were less likely to provide a DBS than men recruited through community groups. Non English-speaking men in OMS (OR=0.72) and non-Caucasian men in Lambda (OR=0.69) were less likely to provide biological specimens. Provision of DBS was more likely in Ottawa than Toronto, and more likely among IDU and Marijuana users. Men reporting UAI were more likely to provide saliva than those who did not report UAI.
CONCLUSIONS: While provision rates may be context specific, the lower proportion of men providing DBS over saliva was anticipated based on feasibility studies. Pain-both perceived and actual-and related fear, as well as the social significance of blood within this community may be strong barriers to the collection of DBS for HIV prevalence studies. While serum allows the study of a broader range of sexually transmitted bacterial and viral infections than saliva, the study teams' experiences suggest that even greater attention need be given to preparing communities for DBS than saliva. The technicalities of such preparation open new avenues for study and collaboration between researchers and participating communities.

O009
THE ASSOCIATION BETWEEN MANDATORY REPORTING OF HIV AND THE PROPORTION OF PEOPLE NEWLY DIAGNOSED WITH HIV EARLY IN THEIR ILLNESS

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OBJECTIVE: HIV was made a reportable disease in British Columbia in May 2003, leading to enhanced surveillance and contact tracing. The primary objective of this study was to examine the impact of this change in HIV reporting on the detection of early HIV infections.
METHODS: Banked HIV positive samples (confirmed by Western Blot), collected between 1 Jan 2000 - 31 Dec 2003 (pre-reporting group) and 1 Jan 2004 - 23 Aug 2006 (post-reporting group) were re-tested using the bioMérieux Vironostika or the Organon HIV detuned tests. Detuned EIA testing has been used to monitor trends in recent seroconversions (i.e. less than 6 months) among newly identified cases. Samples were classified as recent infection or established infection. The proportion of individuals who were recently infected in the pre-reporting group was compared to the post-reporting group using a Pearson's Chi-Square.
RESULTS: Among the 1647 newly reported cases of HIV in the pre-reporting period and 1089 cases in the post-reporting period, serum was available for 1270 and 539 cases respectively. In the pre-reporting group 352 (27.7% ; 95% CI: 25.3, 30.2) of cases were recent infections compared to 182 (33.8.1% (95%; CI: 29.9%, 37.9) in the post-reporting group (p= 0.01).
CONCLUSIONS: In this study, detuned EIA testing was useful for objectively evaluating a public health intervention. This study demonstrated an increased proportion of individuals testing early in their HIV illness after HIV became reportable suggesting that enhanced surveillance and contact tracing may be beneficial in reducing the time from infection to diagnosis.

O010
PEER INTERVENTIONS TO PROMOTE EMPOWERMENT AND HIV RISK REDUCTION AMONG SEX WORKERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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BACKGROUND: Sex workers have been described as one of the most vulnerable risk groups for HIV infection, not only due to high risk sexual behaviors but also resulting from discrimination and marginalization within the larger society. Peer interventions may be effective in reducing HIV risk and promoting empowerment among sex workers by providing knowledge and skills regarding HIV risk reduction appropriate to sex worker's social contexts.
OBJECTIVES: To assess the effect of peer interventions in reducing HIV risk and promoting empowerment among sex workers.
METHODS: The comprehensive search strategy included searching multiple electronic databases with no language, time or geographical restrictions to locate relevant articles, including Medline, AIDSLine, CINAHL, and EMBASE. Data was extracted from included studies and study quality assessed. Meta-analyses were conducted on controlled studies when studies utilized similar interventions and the same type of outcome.
MAIN RESULTS: Twenty-four trials including over 10 990 participants were included. Peer interventions in five studies were significantly associated with increased consistent condom use (OR 3.18 [CI: 1.17, 8.66], p <.05). Peer interventions in eight trials found significant impacts on increased occasional condom use (OR 1.71 [1.31, 2.23], p < 0.001). Peer interventions significantly impacted sex workers ability to refuse client sex without a condom in five studies (OR 2.78 [1.31, 5.92], p <0.05). Two studies examined the impact of interventions on HIV incidence and findings were non-significant (OR 0.74 [CI: 0.36, 1.5], p >.05). Peer interventions in six studies did not significantly impact STI incidence (OR 0.73 [CI: 0.52, 1.04], p >.05).
AUTHORS CONCLUSION: Evidence suggests peer interventions promote both consistent and occasional condom use among sex workers and clients and empower sex workers to refuse client sex without a condom. Further research with increased sample sizes is required to assess the impact of peer interventions on HIV and STI incidence reduction.

O011
IMPROVING HIV SELF-MANAGEMENT IN MARGINALIZED URBAN PEOPLE: IDENTIFYING HIV RELATED HEALTH PRIORITIES AND BEHAVIORAL GOALS FROM THE PATIENT PERSPECTIVE & UNDERSTANDING DIFFERENCES BETWEEN ABORIGINAL AND NON-ABORIGINAL PEOPLE

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OBJECTIVE: To better understand HIV related health challenges of marginalized inner city Aboriginal and Non-Aboriginal people.
DESIGN: Qualitative descriptive study.
SETTING: Downtown Eastside Neighborhood, Vancouver Native Health Society, Vancouver, BC.
PARTICIPANTS: 26 HIV positive people (13 Aboriginal, 13 Non-Aboriginal) were assigned to one of 4 focus groups: Aboriginal Men, Aboriginal Women, Non-Aboriginal Men, Non-Aboriginal Women.
INTERVENTIONS: A focus group template, composed of open-ended questions, guided four 90 minute focus group discussions where participants were questioned regarding their HIV related health challenges and goals. Flash cards with words like "Pain", "Discrimination", or "Drug Addiction" were organized into a Medicine Wheel format and used as discussion prompts. A total of 29 health priorities were identified and subsequently ranked by means of a card sorting activity. Main outcome measures: Major themes from the transcripts were identified and weighted rankings of the 29 health priorities were analyzed for each subgroup.
RESULTS: Collectively, the top 7 health priorities (in descending order) were: Drug Addiction, Depression, Weight Loss, Employability, Intimate Relationships, Grief & Loss and Homelessness. The men ranked "Employability" higher whereas women ranked "Depression", "Body Image", and "Grief & Loss" higher. Among the males, Aboriginal men attached greater importance to dealing with "Guilt & Shame", "Pain from Past Trauma" and "Social Isolation." Among the females, Aboriginal women tended to rank "Anxiety/Fear" and "Weight Loss" higher than their Non-Aboriginal counterparts, who ranked "Social Isolation" and "Lacking Direction in Life" as bigger issues.
CONCLUSION: The spectrum of health issues for those living with HIV/AIDS is diverse, and this study suggests a differential hierarchy of HIV related health priorities between Aboriginal and Non-Aboriginal inner city people, as well as gender differences. Knowledge of these health challenges and behavioral solutions can help design self-management support programs to meet the disparate needs of marginalized urban people living with HIV/AIDS.

O012
INITIATION OF AN OUTREACH PROGRAM AT ALOUETTE CORRECTIONAL CENTRE FOR WOMEN: A MULTIDISCIPLINARY COLLABORATIVE APPROACH TO HIV CARE

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BACKGROUND: A disproportionate number of marginalized women are affected by HIV/AIDS and have limited access to healthcare. Many of these women become incarcerated at various times. This presents healthcare providers with an opportunity to offer HIV management and harm reduction strategies.
Oak Tree Clinic (OTC) is sensitive to the prevalence of high-risk behaviors which provide the potential for HIV to become endemic in prisons. In BC prisons, HIV seroprevalence levels are more than 10 times higher than in the general population (1.0 to 8.8 percent).
In BC 2006/2007, 1, 058 adult females were admitted to sentenced custody. Aboriginal women account for 29% of female admissions.
Alouette Correctional Centre for Women (ACCW) in BC is a medium security facility (160 inmate capacity). Median length of stay is six months. They offer a wide range of services and healthcare.
Recently, the number of identified positive women has increased, potentially due to point of care testing.
While in ACCW, women access HIV care reliably but after their release into the community, a majority of these women are lost to follow-up.

INTERVENTION: Historically, ACCW referred women to OTC. In November 2008, OTC initiated an outreach program comprised of a multidisciplinary team that provides specialized HIV care on-site and complements the care provided by ACCW. This outreach program saves resources for ACCW and provides a unique opportunity for OTC to educate and engage women and the various employees at ACCW.
OUR GOALS: Develop an effective prison release program that incorporates case management, drug treatment and medication adherence strategies. OTC main objectives are to (a) provide HIV care for newly diagnosed HIV positive women, (b) offer continuity of HIV care and comorbid conditions while in prison and post discharge, (c) assist women transition back to their community, (d) provide various psychosocial supports and (e) ensure follow-up.

Antiretrovirals and Clinical Trials

O013
IMMEDIATE VS. DEFERRED SUBSTITUTION OF DUAL BOOSTED PROTEASE INHIBITORS (PIS) WITH DARUNAVIR/RITONAVIR (DRV/R)

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BACKGROUND: Prior to the availability of newer PIs, two or more ritonavir-boosted PIs were often used in treatment-experienced patients with previously documented PI resistance and/or failure of PI-containing therapy. We evaluated regimen simplification by substituting DRV/r for 2-3 boosted PIs in patients with virologic suppression, while the rest of the antiretroviral regimen remained unchanged.
METHODS: Patients with viral load (VL) <50 copies/mL for ≥2 months while receiving 2-3 boosted PIs and no prior DRV/r were randomized to either immediate substitution (IS) of the PIs in their regimen with DRV/r 600/100mg twice daily or deferred substitution (DS) at 24 weeks. Clinical and laboratory outcomes including CD4 cell counts and VL were followed to 48 weeks.
RESULTS: 23 patients (22 male, median age 52 years) were randomized and received study treatment, 12 IS and 11 DS. At baseline, median CD4 was 430 cells/mm^3 (range 170-990) and all had VL <50 copies/mL. Boosted PIs (n) were LPV/SQV (11), LPV/ATZ (6), ATZ/SQV (3), LPV/APV (2), and LPV/FPV/SQV (1). All patients received N(t)RTIs (median 3, range 1-4), 5 received NNRTIs (3 nevirapine, 2 efavirenz), and 4 received raltegravir. Two patients (both DS) discontinued early, one at week 17 (unrelated to study medication) and one at week 25 (due to gastrointestinal symptoms 1 week after starting DRV/r). One patient in each arm has not yet reached week 48. VL was <50 copies/mL in all remaining patients at weeks 24 (n=12 IS, 10 DS) and 48 (n=11 IS, 8 DS). Median CD4 changes (cells/mm^3) from baseline in IS and DS, respectively, were +5 and –30 at week 24, and +70 and +35 at week 48.
CONCLUSIONS: Preliminary results suggest that in virologically suppressed patients with previous PI resistance and/or failure, replacing 2-3 boosted PIs with DRV/r is generally safe and effective, maintaining virologic suppression over 24-48 weeks.

O014
EVALUATION OF ANTIVIRAL SUBSTITUTION INTERVENTIONS IN PATIENTS WITH LONG-TERM VIROLOGIC SUPPRESSION: THE EASI STUDY

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OBJECTIVES: The long-term success of HAART is based on the maintenance of adherence after virologic suppression has been achieved. This may be impaired by minor side effects that may not be significant enough to mandate a change in therapy. It may be that this problem could be productively addressed by a change of the non-NRTI component of the regimen to include atazanavir (ATV), with a measurable improvement in the quality of life.
METHODS: We enrolled patients with maximal virologic suppression on double-class HAART therapy in this prospective, observational 48 week study. The non-NRTI component of the regimen was changed to ATV (with or without ritonavir [RTV]) and the patients were followed monthly basis to evaluate safety and efficacy of HAART as well as quality of life using the MOS-HIV health survey and the Symptoms Distress Module (SDM).
RESULTS: We enrolled 67 patients (5 women), with a mean CD4 count of 470 cells/mm3 at baseline. A total of 59 patients had ≥ 1 SDM symptom (n = 47 for GI symptoms), bothersome in 55 cases. Prior regimens included on LPV/r (35), NVP (16), EFV (16). ATV was initiated with RTV in 25 cases. After 24 weeks, 61 remained on ATV, 57 with maximal virologic suppression. The mean number of SDM bothersome symptoms decreased from 7.1 to 6.2 at week 12 (p=0.046). MOS-HIV Physical Summary Score increased for 46.6 to 50.2 over 12 weeks (p=0.021). All benefits were maintained to week 24 and 48, with a mean CD4 count of 489 cells/mm3. There were no ATV-associated treatment discontinuations or serious adverse events.
CONCLUSION: Modification of single components of an effective HAART regimen to ATV is safe and effective, and is associated with a measurable and statistically significant improvement in the quality of life of patients, despite a perception that the previous medications were well tolerated. This approach may be useful to consider in patients experiencing minor side effects and may lead to increased adherence and more preserved virologic suppression in the long-term.

O015
TREATMENT LIMITATIONS IMPOSED BY ANTIRETROVIRAL DRUG RESISTANCE MUTATIONS: A COMPARISON OF INITIAL REGIMENS CONTAINING BOOSTED PIS WITH THOSE CONTAINING NNRTIS

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BACKGROUND: NNRTI-based combination antiretroviral therapy (ART) is mainly used as first-line treatment for HIV in resource-limited settings. However, failing NNRTI-based regimens may have greater potential to develop resistance, which may limit the effectiveness of second-line therapy, than PI-based regimens.
METHODS: We conducted a study of ART-naïve individuals aged ≥ 18 years who initiated ART consisting of 2 NRTIs and either an NNRTI or a boosted PI, between January 2000 and June 2006 in BC, Canada. We compared resistance mutations of those who initiated ART with boosted PIs with those initiating with NNRTIs. Genotypic sensitivity scores (GSS) were calculated to determine the effects of these mutations on remaining active drugs typically available in resource-limited settings, using a list from the Drug Access Initiative in Uganda.
RESULTS: 1666 participants initiated ART; 818 (49.1%) with NNRTI-based regimens and 848 (51.9%) with PI-based regimens. NNRTI-prescribed participants have lower baseline viral loads and have higher CD4 cell counts at baseline (median of 190 vs. 120 cells/ µL; p <0.001). There were no differences in the proportion of subjects with two consecutive VLs < 50 copies/ ml in the first year of ART, between the two groups (p = 0.47). 47% of participants had at least one drug resistance test performed after ART initiation. Participants who initiated NNRTI-based regimens had lower median GSS (9.8 vs. 11.0; p <0.001) than those in the PI group. A total of 308 (18%) participants eventually switched therapy to the opposite drug class. The odds of achieving two consecutive VLs of <50 copies/ml after switching was inversely associated with NNRTI use in the initial ART regimen (Odds Ratio: 0.32; 95% CI: 0.11 - 0.97).
CONCLUSION: The use of NNRTI-based first-line regimens was associated with ART drug resistance patterns which limit the number of available second-line drug choices. These findings are consistent with some results from clinical trials, and may have policy implications for resource limited settings.

O016
SHOULD NRTI STILL BE USED IN SALVAGE REGIMENS, WITH NEW CLASSES/ GENERATIONS OF ANTIRETROVIRALS IN THREE-CLASS-EXPERIENCED, MULTI-DRUG RESISTANT PATIENTS?

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BACKGROUND: In multi-drug-resistant (MDR) patients, NRTI often have little activity, may add toxicity, drug interactions, and extra cost. We evaluated the impact of using different numbers of NRTIs on the virologic efficacy of salvage regimens.
METHODS: Patients analyzed were enrolled in an observational cohort, were all 3-class experienced, MDR and received ≥1 newly approved ARV (etravirine (ETR), maraviroc (MVC) or raltegravir (RTG)) in combination with clinician-chosen optimised-background-regimen (OBR). Determinants of VR (VL <50 copies/mL at 6 months) was analysed by multiple logistic regression according to the number of prescribed and active ARVs in the OBR.
RESULTS: N=101; median time on ARV was 12 years and median VL at BL 4.1 log. Overall VR rate was 73%. OBR consisted of 2, 3, 4 and 5 ARVs in 19%, 53%, 25% and 4% respectively. Considering actual and archived mutations, 67% of patients received less than 2 active drugs in their OBR. VR rate with no active ARV in OBR was 50%, 69% with one and 96% with ≥2 active ARVs. Number of NRTIs prescribed as part of OBR was 0 (n=9), 1 (n=17), 2 (n=64) and 3 (n=11) and the VR rate was 100%, 82%, 76% and 36% respectively. Genotypic data showed that 75% had 0, 20% had 1 and only 6% had 2 active NRTIs in their OBR. VR rate was 70% with 0 and 80% with 1 or two active NRTIs in the OBR (p=0.287). In multivariate analyses, VR was more frequently achieved in patients with a higher number of active drugs (OR=2.096, p=0.031) and less so as the number of prescribed NRTIs increased (OR=0.370, p=0.047).
CONCLUSIONS: With new ARVs, our MDR patients achieved high VR rates. Our results concur with licensing trials of these new ARVs to show that VR is proportionate to the number of active drugs in the OBR. Using non-active NRTI for MDR patients did not improve outcomes; moreover, our results suggest a possible worsening of the VR with increasing number of NRTIs prescribed. These surprising findings warrant further exploration.

O017
THE EFFECT OF MIXED CAROTENOIDS SUPPLEMENTATION ON CD4 T LYMPHOCYTE COUNT IN HIV/AIDS

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OBJECTIVE: We aimed to assess the effect of carotenoids supplementation and change in serum carotene on CD4 T lymphocyte count in AIDS.
METHODS: The Carotenoids Trial (CTN 091) was a randomised double blind control clinical trial of carotenoids supplementation in treated AIDS patients. Study participants received natural mixed carotenoids (initially equivalent to 72 mg beta-carotene) plus multivitamins (n=165) or the multivitamins alone (n=166) daily and were followed up quarterly. We performed a stratified analysis of changes from baseline in CD4+ cell count in quartiles of serum carotene change from baseline. We also performed longitudinal analysis using the Generalized Estimating Equations (GEE) with identical link function.
RESULTS: Baseline median (IQR) CD4+ cell count was 60 (28, 100) and 76 (30, 114) cells/μL, and serum carotene was 1.8 (1.2, 2.6) and 1.8 (1.2, 2.9) μmol/L in treatment and control groups, respectively. In stratified analysis at nine months overall, the highest quartile change in serum carotene from baseline (mean +3.4 μmol/L) had a mean change of +67 CD4+ cells/μL, and +23 in the lowest quartile of serum carotene change (mean –1.2 μmol/L), which was statistically significant (p=0.04) across quartiles overall, and also in the treatment group (p=0.04). An increase of 1.0 μmol/L in serum carotene was associated with an average 5 cells/μL increase in CD4 T lymphocytes (p <0.0009 overall, controlling for time).
CONCLUSIONS: Treatment with mixed carotenoids and increase in serum carotene is associated with increase in CD4 T lymphocytes, in advanced HIV infection.

O018
CLINICAL OUTCOMES FROM OPTIMA: A PRAGMATIC RANDOMISED CONTROL TRIAL OF ANTIRETROVIRAL TREATMENT STRATEGIES IN ADVANCED MULTI-DRUG RESISTANT HIV INFECTION

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BACKGROUND: OPTIMA is a tri-national randomized, controlled clinical management trial that assessed the effect of two antiretroviral treatment (ART) strategies in patients with advanced HIV disease and multi-drug resistance (MDR) with limited re-treatment options.
METHODS: Patients with ≥ 2 ART failures, viral load (VL) >2,500 copies/mL on ART with CD4 < 300/mm^3, were factorial-randomized to (a) a 3-month ART interruption vs. continuation, and to (b) intensification: mega-ART (≥5 drugs) vs. standard ART (≤ 4 drugs). The primary composite outcome was time to AIDS or death. The secondary outcome was non-HIV serious adverse events (SAE).
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/mm^3; 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. Patients were on preventative therapies for opportunistic infections. Patients discontinued mega-ART significantly sooner than standard retreatment. There were no statistically significant differences in the composite outcome of AIDS or death, in death alone or in SAE between treatment strategies.

	Intensification Mega-ART vs Standard		Interruption* 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 were randomized only to Intensification options*

CONCLUSIONS: Long-term clinical outcome did not differ by treatment strategy in advanced MDR HIV with limited retreatment options.

Human Rights, Legal, Policy Aspects of HIV

O019
HIV AND GENERAL COMMUNITY PERSPECTIVES ON FAIR RESOURCE ALLOCATION

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INTRODUCTION: HIV-related resource allocation decisions exemplify many features of difficult choices, including high costs and equity concerns. Equity is important but contested. We explored the concept of fairness in resource allocation from the perspective of community members, including people living with HIV.
METHODS: We conducted 4 key informant interviews followed by 4 focus groups, one each for HIV-positive men and women and one each for men and women from the general population. We analyzed responses using qualitative methods based on grounded theory.
RESULTS: We identified 6 themes: 1) Efficiency is important, but should be defined broadly. It may be defensible to withhold resources when treatment is futile or the "return on investment" is slim; 2) Alongside efficiency, resource allocation decisions should value compassion and equity; 3) Resource allocation decisions are inherently complex, involve difficult trade-offs, because of uncertainty, exceptional circumstances, and difficulties in thinking about groups vs. individuals (including one's self) 4) Many do not want to be involved in such decisions. Alternatives include

nominating others to make decisions or putting trust in "research" to find solutions; 5) Resource allocation decisions are viewed as inherently political. Distrust of how decisions are made and the reasons for the decisions is common. 6) Some see solutions in working outside of official systems, but such suggestions remain contentious. People living with HIV generally gave similar responses to individuals from the general public.
CONCLUSIONS: People living with HIV and members of the general public have a good appreciation of the complexities of resource allocation decisions. However, both groups were reluctant to partake in such processes for HIV-related and other types of medical care. Our findings have implications for the movement to involve "consumers" in policy-level decision making as many individuals find such issues so challenging that they are unable to make decisions.

O020
AN ESCALATION IN THE USE OF CRIMINAL SANCTIONS FOR NON-DISCLOSURE OF HIV STATUS: LEGAL DEVELOPMENTS AND COMMUNITY RESPONSES

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OBJECTIVES: To track criminal charges for non-disclosure of serostatus, assess the impact of the increasingly expansive use of criminal law with respect to HIV exposure, and develop an effective community response.
METHODS: Review of primary legal sources, legal literature and media reports, with a human rights analysis. Elaboration of plain language information sheets, policy briefs and resources for advocates. Formation of a working group composed of community stakeholders and members of the legal community in Ontario.
RESULTS: In 2008, several high-profile cases resulted in significant legal developments and re-energized the public debate about criminal charges for HIV non-disclosure. The number of HIV-positive people criminally charged per year for not disclosing their HIV status to prospective sexual partners has escalated in the last three years. The severity of the charges and sentences has increased. New issues, including the relevance of viral load to the legal test of "significant risk" of transmission, have arisen in court proceedings.
Public policy is developing through the application of the criminal law by courts and prosecutors, largely in an evidentiary vacuum. Proponents argue that such charges are justified on grounds of punishment and deterrence, and that they serve a prevention function. AIDS organizations have expressed concerns that these prosecutions could undermine public health efforts and increase stigma and discrimination against people living with HIV. A working group is developing a community response.
CONCLUSION: There remains a need for research and debate about the impacts of criminal sanctions for non-disclosure on stigma and discrimination against people living with HIV and on HIV prevention efforts. An effective community response is emerging.

O021
"INJECTING REALITIES": EFFECTIVE ADVOCACY FOR HIV PREVENTION IN CANADIAN PRISONS

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Various studies have reported rates of HIV and hepatitis C virus (HCV) among prisoners in Canada to be much higher than in the population as a whole, in part because prisoners have inadequate access to HIV prevention tools such as sterile needles and syringes. Needle and syringe programs (NSPs) are a proven, cost-effective means of reducing HIV and HCV transmission among people who inject drugs. Yet they do not exist in Canadian federal prisons, despite the considerable evidence from prisons around the world supporting their effectiveness. To date, Canadian prison systems have refused to implement prison-based needle and syringe programs (PNSPs).
While much of the public health and human rights evidence supporting the implementation of PNSPs has been gathered, the voices of those who have been placed most at risk of HIV and HCV infection have been missing. The Canadian HIV/AIDS Legal Network sought to bridge that gap by interviewing prisoners and ex-prisoners from across the country to learn more about their reasons for injecting, their use of needles and make-shift implements and the sharing of these materials.
Between 2008 and 2009, close to 50 interviews were conducted documenting the personal experiences of federal prisoners and ex-prisoners who had injected drugs in prison. Interviewees described persistent injection drug use in federal prisons, limited access to sterile needles and widespread sharing of used needles. Many described how the failure to provide sterile needles while they were injecting drugs in prison placed their health at risk, and some reported having become infected with hepatitis C as a result of sharing used needles in prison. Overwhelmingly, interviewees supported PNSPs.
A compilation of excerpts from the interviews has been developed and paired with the scientific evidence and human rights arguments for implementing PNSPs. This will be published and distributed across Canada. Hearing first-hand from prisoners and ex-prisoners will strengthen the case for change, which governments continue to ignore even as a growing body of evidence highlights the need.

O022
REFORMING CANADA'S PROSTITUTION LAWS: A STRATEGY TO REDUCE SEX WORKERS' VULNERABILITY TO VIOLENCE AND HIV

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Despite policy statements by international bodies, such as UNAIDS, against criminal sanctions targeting sex workers, many countries continue to criminalize sex work. In Canada, the exchange of sexual services for money has always been legal. However, it is a criminal offence to engage in activities relating to prostitution, such as communicating in public, operating a brothel and procuring.
In 2007, street-based sex workers from Vancouver's Downtown Eastside initiated a challenge to Canada's criminal laws relating to adult prostitution. The sex workers are represented by lawyers from Pivot Legal Society and will argue that these laws violate their constitutionally protected right to security, liberty, life, equality, expression and association.
In this landmark trial, sex workers and academics will provide evidence about the alarming violence and harm experienced by sex workers and the impact of this legislation on sex workers' health, safety and human rights. Under this legal framework, sex workers face conditions of extreme violence, including the possibility of death, and over sixty Vancouver women have gone missing, some of which have been confirmed to have been murdered. In terms of vulnerability to HIV, the violence and powerlessness experienced by street-based sex workers negatively impacts sex workers' ability to insist on condom use when providing services to a client. Criminalization also limits sex workers' access to health care and other services. Sex workers will argue that the laws limit their ability to take steps to create safe conditions within the sex industry.
This litigation could lead to the decriminalization of adult prostitution in Canada. The removal of criminal sanctions would improve sex workers safety and increase their control over HIV prevention strategies. Of particular importance, the trial would drastically change the landscape of sex workers' rights in Canada, ensuring employment protections, occupational health and safety standards and the ability to control working conditions and unionize.

O023
CORPS DÉVIANTS, SILENCES ET MARGINALISATION : ANALYSE INTERPRÉTATIVE DE LA REPRÉSENTATION DU BAREBACKING DANS LA PRESSE GÉNÉRALISTE FRANCOPHONE (2001 – 2008)

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PROBLÉMATIQUE : Plusieurs productions scientifiques sur les HARSAH évoquent le barebacking comme fait empirique et validé. Quelques chercheurs (Adam 2006; Holmes et al., 2006) suggèrent une contextualisation importante du concept et de son émergence comme phénomène. Nos travaux abordent son aspect interprétatif et sa production de sens.
QUESTION DE RECHERCHE : De quelle façon le barebacking a-t-il été représenté dans la société québécoise par le biais de la presse écrite généraliste francophone?
MÉTHODE : 1-Revue des articles de presse populaire (N=20). 2- Grille d'observation qualitative. 3-Analyse textuelle des thématiques émergentes.

RÉSULTATS : L'analyse des thématiques montre des pistes d'approfondissement: 1. Production sociale: rapport sur la littérature gaie de 2001 et articles sur la science; 2. Formation de l'objet : passe d'« inconnu » à « objet de controverse légitime » (Allan, 2004); 3. Sexualité et normativité: étant une « forme » et un « type » de sexualité déviante, il devient normalisé comme un objet « gai »; 4. Expression de l'altérité: « provenant d'ailleurs » (Paris, New York, etc.) mais localisé chez « nos gais contre les normes »; 5. Personnalisation: les « bugchaser » et les « visages » de leur intentionnalité y sont extensivement décrits; 6. Pyramide des Experts: passe de méconnaissance à objet discuté. Positionnements nuancés, mais porte un effet discursif contraire puisqu'abordé - donc, légitime de l'être; 7. Re-définition des êtres : les messages résiduels deviennent a) tous les « gais » séropositifs ont été/sont des « barebackers », b) les PVVIH sont une menace grandissante pour la société, c) les hommes gais sont tous potentiellement des barebackers.
DISCUSSION : Exemple de la normativité des médias. Démontre le difficile accès à la réalité et au vécu culturel des HARSAH. Effet probable d'une double couche de marginalisation (société envers les gais et gais envers les séropositifs). Approfondissement de la représentation serait nécessaire. Une enquête sur le « terrain » pourrait évaluer la portée et l'appropriation du concept dans le « lifeworld » (Warner, 2002) des communautés montréalaises.

O024
THE RIGHT THING TO DO? A CRITICAL ANALYSIS OF PUBLIC HEALTH ETHICS, RIGHTS DISCOURSE, AND THE EXPANSION OF ANTIRETROVIRAL THERAPY (ART)

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OBJECTIVE: The expansion of HIV treatment in Vancouver's inner city has been discussed in relation to low numbers of individuals accessing ART and concomitant mortality increases, changing treatment guidelines, and the potential public health advantages in reducing HIV transmission. These justificatory schemas seem to demonstrate convergence of sound ethical, clinical and economic interests. As public health ethics continues to engage with rights-based ethical frameworks, the expansion of HIV treatment appears to be an intervention that is coherent, rational and good – an ideal exemplar of the utility of a rights framework for public health.
METHODS: This paper provides an analysis of ethical considerations surrounding the expansion of ART in a community demarcated by social and economic disadvantage. We draw on 15 months of participant observation, life history and semi-structured, open-ended interviews with individuals in the community clinic, specialist, tertiary care and street-based settings where HIV care is delivered. Participants include women and men living with HIV/AIDS, nurses, physicians and regional health authority programming staff (n= 30). Empirical data is situated within philosophical theory and public health ethics.
RESULTS: The subtleties of negotiation, resistance, and acquiescence to the governance of individual and public health suggest that "rights" may be insufficiently attentive to the ways in which micronetwworks of power shape agency (and by extension, treatment decisions); central issues of poverty and colonialism further trouble a rights framework, given the historical predication of rights on property and citizenship.
DISCUSSION: Although rights-based discourse provides important rhetorical functions in relation to HIV/AIDS, its pervasive and unexamined use may potentially act as a normative "pastoral" power: serving the interests of medical authority, quieting contested decisions, while urging responsibility, self-governance and risk management on the part of 'citizens.' Failures in meeting the reciprocal responsibilities attached to rights may produce unintended social consequences, further marginalizing the most disadvantaged.

HIV and Innate Immunity

O025
ASSESSMENT OF THE FUNCTIONAL POTENTIAL OF NK CELLS AND NK CELL SUBSETS IN HIV INFECTED SLOW PROGRESSORS CARRYING DIFFERENT KIR/HLA GENOTYPES

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BACKGROUND: Natural Killer (NK) cells may play a role in determining time to AIDS and viral load (VL) setpoint as suggested by epidemiological studies linking certain KIR/HLA combined genotypes with these outcomes. The KIR/HLA genotype with the most potent beneficial influence on time to AIDS and VL is the KIR3DL1*h/*y/HLA-B57 (*h/*y+B57) NK receptor-ligand combination. Peripheral NK cells include a CD56hi subset enriched for cytokine-secreting cells and CD56loCD16+ subset enriched for cytolytic cells.
HYPOTHESIS: The phenotypic properties and functional potential of NK cells from individuals carrying *h/*y+B57 will differ from individuals without this KIR/HLA genotype.
METHODS: Twenty HIV-infected KIR3DL1*h/*y slow progressors (SP) were studied: 4 *h/*y+B57, 12 *h/*y+Bw4 (excluding B57) and 4 Bw6 homozygous (Bw6hmz) controls (KIR3DL1 alleles do not recognize Bw6). Lymphocytes were stimulated for 6hrs with HLA-devoid K562 cells. Multiparametric flow cytometry was used to gate on CD3-CD16+CD56+ NK cells and Boolean gating used to determine the percent of KIR3DL1+ (3DL1+) NK cells expressing CD107a and secreting IFN-γ and TNF-α. Mann-Whitney tests assessed the significance of between-group differences in 1) percent of tri-functional KIR3DL1+ NK cells, 2) percent contribution of tri-functional NK cells to the total K562-response of KIR3DL1+ cells and 3) percent of CD56hi NK cells.
RESULTS: *h/*y+B57 SPs had higher percentages of tri-functional CD107a+IFN-γ+TNF-α+3DL1+NK cells than Bw6hmz (median [range] 0.16 [0.02-0.47]% versus 0.003 [0.00-0.016]%; p=0.02). The contribution of tri-functional NK cells to the 3DL1+ K562 response in was greater in *h/*y+B57 than Bw6hmz SPs (2.531 [0.43-5.56]% vs 0.05 [0.00-0.31]%, p=0.03). *h/*y+B57 had higher percentages of CD56hi NK cells than Bw6hmz SPs (26.90 [10.50-43.80]% vs 5.30 [1.70-8.99]%; p=0.03).
CONCLUSION: The data support the conclusion that NK cells from individuals carrying the *h/*y+B57 combination protective for HIV disease have more CD56hi NK cells with increased cytokine secretion capacity and a higher antiviral functional potential than individuals carrying other KIR/HLA. The functional potential of these NK cells upon encountering HIV-infected cells with reduced HLA expression may be one of the mechanisms underlying favorable disease outcome in HLA-B57+ HIV-infected subjects.

O026
IMBALANCED PRODUCTION OF IL-18 AND IL-18 BINDING PROTEIN, AND ITS IMPACT ON NK CELLS IN HIV-INFECTED PATIENTS

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INTRODUCTION: IL-18 is a powerful proinflammatory cytokine that can regulate both innate and adaptive immune responses. In vivo, its activity is tightly regulated by IL-18 Binding Protein (IL-18BP), another cytokine that specifically binds and neutralizes IL-18 with high affinity. We have previously shown that IL-18 concentrations are significantly increased in the circulation of HIV-infected AIDS patients compared to those in healthy people. However, no studies to date have been conducted on the production of IL-18BP in these patients. We addressed this issue in this study.
METHODS: We measured the levels of IL-18 and IL-18BP in the sera of 32 HIV-infected patients by using commercial ELISA kits and compared them with the values obtained from a similar number of healthy HIV-seronegative persons. We also determined the absolute and total number of different NK cell subsets and NK cell activity in the PBMC of these individuals. Finally we determined the effects of recombinant human

IL-18 as well as of IL-18-rich sera from AIDS patients on cytolytic activity and survival of human NK cells.
RESULTS: Our results show that sera from HIV- infected patients had up to 3 fold higher levels of IL-18 compared to the sera from healthy people. However, levels of IL-18BP were lower in the infected individuals compared to the healthy ones. IL-18/IL-18BP ratio is increased in the patients resulting in a further increase in the concentrations of biologically active IL-18 in the circulation of these patients. Our results show that the concentration of IL-18 correlated inversely with NK cell numbers as well as with their cytolytic activity. Furthermore rhIL-18 and IL-18 rich sera from AIDS patients caused apoptosis in primary human NK cells that could be inhibited by anti-Fas antagonist antibodies. The cytokine also enhanced susceptibility of NK cell to Fas-mediated death.
CONCLUSIONS: Our study shows that enhanced IL-18 bioactivity in HIV-infected patients may contribute to the pathogenesis of AIDS by disrupting NK cell homoeostasis.

O027
WITHDRAWN

O028
IMMUNE-RELATED GENES AT THE CD4 GENETIC LOCUS ARE IMPLICATED IN DIFFERENTIAL HIV DISEASE PROGRESSION

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OBJECTIVES: Epidemiological studies have shown that linked polymorphisms in the CD4 and GNB3 genes on chromosome 12 are associated with altered HIV disease progression in a Kenyan cohort. GNB3 encodes a G protein subunit involved in signalling through the HIV co-receptors; the polymorphism in GNB3 generates splice variants that increase G protein signalling and, therefore, may affect HIV replication. As part of functional studies designed to address the mechanism by which the GNB3 SNP affects HIV infection, we investigated the expression levels and splice patterns of genes in the CD4-GNB3 locus.
METHODS: The transcriptional activity of genes located near CD4/GNB3 was measured using the Affymetrix Human Exon 1.0 Microarray platform. PBMC mRNA was isolated from enrolees in a Kenyan sex worker cohort and analysed with respect to GNB3 genotype. Candidate genes with differences in splicing were identified, and splicing events confirmed using qRT-PCR.
RESULTS: No significant splicing events were identified in the CD4 gene, but several exons in GNB3 did show expression differences across genotypes. Interestingly, lymphocyte activation gene 3 (LAG3/CD223) located adjacent to CD4 also exhibited differential splicing across GNB3 genotypes. Patients with the GNB3 TT genotype showed significantly lower expression of the N-terminal 4 exons in LAG-3 compared to the wild type GNB3 genotype. Expression of membrane-bound and soluble LAG-3 is currently being evaluated using western blot and flow cytometry.
CONCLUSIONS: The LAG-3 protein plays an important role in regulating T cell activation through its expression on regulatory T cells. Differences in LAG-3 expression and splicing associated with the GNB3 TT genotype may be one of the mechanisms acting to produce the phenotype of delayed disease progression associated with the GNB3 SNP. The role of LAG-3 in HIV infection is unknown and may provide further insight into the role of immune activation in HIV progression.

O029
IDENTIFYING INTERFERON STIMULATED GENES INVOLVED IN BLOCKING HIV-1 INFECTION

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BACKGROUND: Interferons (IFNs) are produced upon viral infections and consist of the first line of defense against pathogens. Three classes of IFN have been identified, designated type I, II, and III. Type I IFN is mainly involved in instigating an antiviral state and comprises IFNα, β, κ, ε, ο, τ, and δ. Previous studies showed that IFNs have the ability to impede with viral replication, including human immunodeficiency virus type I (HIV-1). Type I IFNs act through induction of IFN-stimulated genes (ISGs). While only a few of these ISGs have a well characterized inhibitory mechanism, others remain to be investigated.
OBJECTIVES: We aim to identify the ISGs that are involved in blocking HIV-1 infection in human CD4+ T cells.
METHODS: HIV-1 replication in SupT1 cells was inhibited by more than 100-fold following IFN-α2b treatment, SupT1 cells were thus used as the CD4+ T cell line to screen for ISGs that are responsible for crippled HIV-1 replication. A short hairpin RNA (shRNA) library was generated by Sigma to target 100 ISGs. Stable SupT1 cell lines were created to express shRNAs that target each ISG. Following treatment with IFN-α2b, stable SupT1 cell lines were infected by HIV-1. After 48 hours, virus production was assessed by reverse transcriptase (RT) assay. Levels of infectious virus particles were determined by infection of TZM-bl indicator cells.
RESULTS: A number of ISGs were identified whose knockdown significantly alleviated the blocking effect of IFN-α2b on HIV-1 infection, such as OAS3, BRAF, SKP1A, NMI. A detailed list of the identified ISGs will be presented and their anti-HIV-1 mechanisms will be discussed.
CONCLUSIONS: We have set up a screening system using shRNA and successfully identified a number of ISGs that are key players in blocking HIV-1 infection. The results are expected to further unravel the anti-HIV-1 mechanisms imposed by IFNs.

O030
IMPACT OF HLA CLASS I-ASSOCIATED IMMUNE PRESSURE ON IN VITRO REPLICATION CAPACITY OF HIV-1 VARIANTS ENCODING CLINICALLY-DERIVED GAG-PROTEASE

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BACKGROUND: The clinical significance of HLA class I-driven immune escape is incompletely understood. Disease progression may be influenced by mutations that compromise viral replication, particularly in Gag epitopes restricted by HLA-B alleles. We assessed the impact of HLA alleles on replication capacity (RC) in a cross-sectional, population-based panel of viruses encoding clinically-derived Gag-Protease sequences.
METHODS: Plasma HIV RNA Gag-Protease amplicons were generated from 628 antiretroviral naïve individuals for whom plasma viral load (pVL), CD4, HLA, and HIV sequences were known (BC HOMER cohort). NL4-3 variants containing patient-derived Gag-Protease were constructed by homologous recombination and re-sequenced. RC was expressed as the slope of viral spread in replicate monoculture assays using a GFP-reporter T-cell line, normalized to NL4-3. HLA-associated polymorphisms were pre-defined in a cross-sectional analysis of a multicenter cohort.
RESULTS: Mean±SD RC of the 628 recombinant viruses was 102±14% (NL4-3=100%). Modest yet statistically significant associations were observed between RC and pVL (R=0.12, p=0.002) and CD4 count (R=–0.19, p <0.0001). When RC values were stratified based on HLA alleles expressed, HLA-B exhibited the broadest range (mean RC 82% for B*53 to 112% for B*50), whereas ranges for HLA-A and C alleles were narrower. Alleles significantly associated with higher or lower RC were also identified. No obvious correlation was observed between RC and the number of primary HLA-associated polymorphisms. However, RC of viruses from B57+ individuals encoding the T242N escape mutation in TW10-Gag (N=37) correlated positively with the number of known T242N-associated compensatory mutations (R=0.39, p=0.02).
CONCLUSIONS: This represents the most comprehensive survey of HLA-associated immune pressure and HIV replication to date. Associations between RC and pVL/CD4 support a clinically relevant role for Gag-Protease sequence variation. Results support a dominant influence of HLA-B on RC, and highlight the complex relationship between immune escape, compensatory mutations and HIV pathogenesis.

O031
WITHDRAWN

O032
ACTIVATION OF TLR-INDEPENDENT SIGNALING PATHWAY BY HIV-1 IN PRIMARY HUMAN MACROPHAGES

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Upon recognition of specific molecular components of viruses or other pathogens, the host cell activates multiple signalling cascades through Toll-like receptor (TLR)-dependent and -independent pathways, leading to the production of cytokines and chemokines and initiation of innate and adaptive immune responses. Rapid induction of cytokines including type I interferon (IFN) is a central event in establishing the innate antiviral response. Incoming viral RNA is sensed by two cytoplasmic RNA helicases, RIG-I and MDA-5 in a TLR-independent mechanism. Both cytosolic receptors signal through the mitochondrial adaptor protein MAVS which in turn induces the activation of TBK1 and IKKepsilon leading to IFN production. Knowing that the IFN pathway plays a crucial role in the clearance of viral infection, we were interested in investigating how viruses utilize, evade or succumb to this pathway. As it remains unclear by which mechanisms HIV-1 modulates and evades the early immune response, we investigated the activation of the RIG-I and MDA5 signaling pathway following de novo HIV-1 infection of primary human macrophages. Our preliminary results demonstrate that in a single-cycle HIV-1 infection system the expression of wild-type RIG-I, MDA5 and MAVS inhibits HIV-1 replication in an IFN-independent manner. Moreover, dominant-negative forms of MAVS, which are known to disrupt the antiviral response, restore HIV-1 replication. We also observed that following de novo HIV-1 infection of human macrophages, expression of IFN and interferon-stimulated genes (ISGs) is inhibited, whereas transfection of HIV-1 RNA results in the activation of the IFNbeta-promoter. In sum, these results demonstrate that HIV-1 RNA is able to activate the RIG-I signalling pathway, whereas de novo HIV-1 infection is unable to trigger an IFN immune response, suggesting that a viral protein may interfere with the RIG-I-mediated immune response. The development of new therapeutic strategies targeting the RIG-I signalling pathway may contribute to the prevention of HIV-1 propagation.

Epidemiology of HIV/AIDS

O033
CHARACTERISTICS OF PERSONS WITH A FIRST KNOWN HIV TEST AT THE TIME OF HIV DIAGNOSIS IN BRITISH COLUMBIA, 2004–2007

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OBJECTIVE: Increasing the proportion of HIV+ persons aware of their serostatus requires understanding the characteristics of at-risk individuals who may not be accessing HIV testing. We used provincial HIV surveillance data to examine this question by describing the characteristics of newly diagnosed persons with a first known HIV test at the time of diagnosis.
METHODS: Previous negative HIV test dates for newly diagnosed persons between 2004-2007 were identified through case follow-up and probabilistic matches to provincial HIV testing databases. Cases were persons with no identified previous negative HIV test at diagnosis. Multivariate analysis was conducted in SPSS using key demographic, risk, test, and infection stage variables (selected based on the literature and data quality). Individuals with age < 15 years, or an intertest interval of < 30 days were excluded.
RESULTS: Of 1550 eligible persons, 596 (38.5%) had a first known HIV test at diagnosis. Cases were more likely to be > 65 years (AOR 2.94 [1.10, 7.86]) or of South Asian (AOR 2.89 [1.47, 5.70]), Hispanic (AOR 2.43 [1.37, 4.30]) or Black ethnicity (AOR 3.17 [1.56, 6.44]), or have an AIDS case report within 6 months of diagnosis (AOR 2.61 [1.73, 3.96]). Cases were less likely to be IDU (AOR 0.30 [0.18, 0.50]), MSM (AOR 0.49 [0.29, 0.83], STW (AOR 0.45 [0.23, 0.87]) or have a known HIV+ sexual partner (AOR 0.73 [0.54, 0.98]).
CONCLUSION: In BC, over one-third of newly diagnosed persons are not known to have a previous HIV test; these individuals are more likely to be older and have advanced HIV at diagnosis. However, individuals from populations with a high prevalence of HIV and the focus of HIV testing strategies were more likely to have previously tested. Differences by ethnicity may be related to immigration and poor determination of previous test status.

O034
HIV, SEXUALLY TRANSMITTED INFECTIONS AND MEN WHO HAVE SEX WITH MEN (MSM) IN SUB-SAHARAN AFRICA – THE CASE OF NIGERIA

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BACKGROUND: The epidemiology of HIV/STIs among MSM remains understudied in much of sub-Saharan Africa. This report presents the results of the first sero-epidemiological study of MSM in Nigeria and factors associated with HIV, syphilis and HBV and HCV prevalence.
METHODS: Men who self-identified as MSM were recruited from the two most populous metropolitan cities in South West Nigeria using Respondent Driven Sampling. Data were collected using interviewer-administered standardized questionnaires. For men who consented, venous blood was collected and tested for HIV, syphilis, HBV and HCV.
RESULTS: 1125 MSM were recruited between April and July 2006. The median age of first sex with a woman was 16.7±3.5yrs and 17.7±3.9yrs with a man. Prevalence of HIV was 13.4%, and the prevalence of syphilis, HBV and HCV were 0.3%, 11.7% and 3.2% respectively. HIV positive men were significantly older (27.4±5.31) than uninfected MSM (22.9±4.2) (p <0.0001). HIV prevalence was associated with having higher education (OR 1.74, CI95%1.22-2.49); being employed (OR 3.13, CI95%2.16-4.53); being non-Nigerian (OR 3.80, CI95%1.09-13.1); being married (OR 4.46, CI95%2.04-9.72); having sexual relationships with MSM outside the tribe (OR 1.74, CI95%1.22-2.49); and having sex with uncircumcised men (OR 1.74, CI95%1.22-2.49). Only 6.2% were aware of their HIV positive status prior to our study. Most respondents (72.4%) reported vaginal or anal sex with women in their lifetime and 50% in the previous 12 months. Condom use was low both with male and female partners.
CONCLUSION: This study confirms high levels of HIV and other STIs among MSM in Nigeria. The prevalence of HIV among study participants was 3.5 times higher than the reported national prevalence in Nigeria. Preventive intervention programs targeting this population are urgently needed given the high vulnerability and the high proportion who engage in unprotected sex with both men and women.

O035
CHARACTERISTICS OF INDIVIDUALS WITH ACUTE HIV INFECTION IN BRITISH COLUMBIA

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OBJECTIVE: To review laboratory test data in BC to identify and describe the characteristics of individuals with probable acute HIV infection in preparation for a study designed to rapidly identify acute HIV infections and to intervene to reduce forward transmission events.
METHODS: Laboratory data from February 2006 to October 2008 were analyzed. Individuals with acute HIV infection were defined as having a confirmed positive HIV p24 antigen test, a non-reactive or reactive HIV EIA screen test and a negative or indeterminate Western blot (WB). Duplicate samples from the same individual were excluded and individuals were matched with demographic data contained in the BC HIV case surveillance database.
RESULTS: A total of 92 specimens from 66 individuals met the selection criteria, representing 6.6% of all newly diagnosed HIV infections during the study period. Fifty-five (83.3%) males and 11 (16.7%) females [median ages 39 (range 22-75) and 35 (range 20-62) respectively] were identified. The majority were Caucasian (43, 65.2%) followed by Aboriginal (9, 13.6%), Hispanic (6, 9.1%), Asian (3, 4.5%), and other/unknown (5, 7.6%). When stratified by risk characteristics, 35 (53%) were MSM, 15 (22.7%) were IDU, 11 (16.7%) were heterosexual non-IDU, and 5 (7.6%) had other/unknown risks.

DISCUSSION & CONCLUSIONS: Using current HIV testing protocols, a minimum of 6.6% of all new positive tests represent individuals with presumptive acute HIV infection. The ethnic and risk factors of acute cases are similar to all individuals testing HIV positive for the first time in BC. Ideally, the public health response for individuals with acute HIV infection should be more intensive than for chronic infection because of the high degree of infectivity during the acute phase. Implementation of 4th generation HIV screening tests which detect anti-HIV and p24 antigen simultaneously should enable earlier detection of acute HIV infections and facilitate enhanced prevention efforts.

O036

THE CEDAR PROJECT: A LATENT CLASS ANALYSIS OF LONGITUDINAL PATTERNS OF METHAMPHETAMINE AND CRACK COCAINE USE AMONG ABORIGINAL YOUNG PEOPLE IN BRITISH COLUMBIA, CANADA

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The non-injection use of methamphetamine (meth) and crack cocaine (crack) among young people has been identified as an important modifiable risk factor for HIV infection. Although many studies have examined determinants of substance use, most have not tested for presence of subgroups of young people who use drugs with unique patterns of substance use.

The purpose of this study was to use latent growth mixture modeling (LGMM) to identify sets of substance use patterns in 605 Aboriginal young people who use drugs living in British Columbia. Data was collected every 6 months for 3 years starting in 2003.

The LGMM of meth use suggested the presence of 2 distinct classes of users. Class 1 (n=492) had consistently very low to no use over the 3 years of follow-up. Class 2 (n=113) had erratic use ranging above and below weekly use. Compared to class 1, members of class 2 were less likely to have suffered sexual abuse (OR=0.45), less likely to engage in survival sex (OR=0.47), more likely to be male (OR=4.1), have a history of mental illness (1.85) and have a Two-Spirited identity/GLBTQQ (OR=1.8) after controlling for age, location and age of first use.

The LGMM of crack use also suggested the presence of 2 distinct classes. Class 1 (n=255) had irregular low to medium frequency use. Class 2 (n=348) had relatively consistent high frequency use. Members of the second class were more likely to be female (OR=2.3) and engage in survival sex (1.7) after controlling for age, location and age of first use.

The results of this exploratory study suggest that there is considerable heterogeneity in patterns of substance use and it's determinants among Aboriginal young people. Further research is planned to examine the use of multiple substances and the effect of time dependent effects that occur during follow-up.

O037

THE CEDAR PROJECT: GENERATION OF RISK – THE IMPACT OF MULTI-GENERATIONAL TRAUMA ON RISK BEHAVIOR IN ABORIGINAL YOUNG PEOPLE WHO INJECT DRUGS

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OBJECTIVE: Very few studies address the HIV and HCV vulnerabilities of Aboriginal young people who use injection drugs and have borrowed used needles. This longitudinal analysis explores the rate and potential risk factors for needle borrowing over-time among young Aboriginal people participating in the Cedar Project.

METHODS: The Cedar Project is an ongoing prospective study of Aboriginal young people aged 14-30 living in Vancouver and Prince George who use injection and non-injection drugs. Aboriginal interviewers administered baseline and follow-up questionnaires every six months. Venous blood samples were drawn and tested for HIV and HCV antibodies. A longitudinal analysis was conducted to investigate factors associated with needle borrowing in the past 6 months among participants who reported injecting drugs and completed at least one of the first 5 follow-up surveys. Because of the serial measurements for each study subject, generalized estimating equations (GEE) modeling with logit link was used to accommodate the temporal correlation within participants.

RESULTS: This longitudinal analysis included 905 observations contributed by 374 participants who reported injecting drugs either at baseline or in one of five follow-up surveys. The rate of borrowing used needles in the past 6 months varied from 8.2% to 19.8% over the study period. In the multivariate GEE model, needle borrowing was significantly associated with: residing in Prince George (Adjusted Odds Ratio [AOR]: 3.7, 95% Confidence Interval [CI]: 2.2, 6.2); daily IV opiate use (AOR: 3.5, 95%CI: 1.9, 6.2); needing help injecting in past 6 months (AOR: 2.4, 95%CI: 1.5, 3.6); ever being taken from biological parents into care (AOR: 1.9, 95%CI: 1.1, 3.1); ever helped someone inject (AOR: 1.7, 95%CI: 1.1, 2.6); and binge drug use in past 6 months (AOR: 1.6, 95%CI: 1.0, 2.7).

CONCLUSIONS: Injection prevention programs for young Aboriginal people who use drugs are urgently required. Interventions tailored to address needle-borrowing among young Aboriginal people in the context of multi-generational trauma, including child apprehension, must also be developed.

O038

CRYSTAL METHAMPHETAMINE USE AMONG FEMALE SEX WORKERS IN VANCOUVER, CANADA: MOVING BEYOND INDIVIDUAL-FOCUSED HIV PREVENTION STRATEGIES

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BACKGROUND: Growing rates of crystal methamphetamine use have been reported in many cities across North America, with evidence suggesting associations with elevated sexual and drug risk practices for HIV infection. Given the death of research on the use of crystal methamphetamine among female sex workers (FSWs), we sought to examine the relationship between crystal methamphetamine use and individual, partnership and structural factors among street-based FSWs in Vancouver, Canada.

METHODS: Drawing on data from a prospective cohort of street-based FSWs, we constructed multivariate logistic models to examine independent correlates of crystal methamphetamine among FSWs over a two-year follow-up period using generalized estimating equations (GEE) and a working correlation matrix.

RESULTS: Of a total of 255 FSWs, 78 (32%) reported lifetime crystal methamphetamine use and 24% used crystal methamphetamine during the two-year follow-up period. The most frequent person with whom a FSW first used crystal methamphetamine was a primary sex partner ($p < 0.001$). In a final multivariate GEE model, FSWs who had used crystal methamphetamine in the prior 6 months had a higher proportional odds of being a heroin injector (adjOR=2.98, 95%CI: 1.35-5.22), having a primary male sex partner who procures drugs for them (adjOR=1.79, 95%CI: 1.02-3.14), working in industrial areas (adjOR=1.62, 95%CI: 1.04-2.65), and living on the street (adjOR=1.41, 95%CI: 1.07-1.99).

CONCLUSIONS: Our findings highlight the need for HIV prevention and harm reduction models that target couples as the site of risk management and aim to mediate the gender inequities in access to resources among intimate drug-using sexual partnerships. In addition, this research reveals increased use of crystal methamphetamine among FSWs who live and work in marginalized public spaces reflecting the importance of safer environment interventions that mediate the risk environment and social context of crystal methamphetamine use.

O039
PREVALENCE AND CORRELATES OF FOOD INSECURITY AMONG HIV-INFECTED INDIVIDUALS RECEIVING HIGHLY ACTIVE ANTIRETROVIRAL THERAPY IN BRITISH COLUMBIA

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BACKGROUND: Evidence indicates that food insecurity has been associated with poor health outcomes in the general population; however, this association is less researched in HIV-infected populations, including those receiving highly active antiretroviral therapy (HAART). The objective of this study is to determine the prevalence and independent risk factors of food insecurity among a cohort of adults receiving HAART in British Columbia, Canada.
METHODS: Adults receiving HAART voluntarily enrolled into the Longitudinal Investigations into Supportive and Ancillary Health Services (LISA) cohort. Individual food insecurity was measured among cohort participants using a modified version of the Radimer/Cornell questionnaire. Bivariate analyses were performed to determine differences between explanatory variables for individuals who were food secure and food insecure. Logistic regression was performed to determine independent predictors of food insecurity.
RESULTS: Of the 510 individuals enrolled in our cohort, 311 (70.0%) were found to be food insecure according to the Radimer/Cornell questionnaire. Multivariate analysis indicated that individuals who have annual incomes less than $15,000 (odds ratio [OR] 3.11, 95% confidence interval [CI] 1.91, 5.06), use illicit drugs (OR 2.06, 95% CI 1.18, 3.60), smoke tobacco (OR 2.58, 95% CI 1.53, 4.34), have depressive symptoms (OR 2.43, 95% CI 1.50, 3.95), and have a lower CD4 cell count (OR 1.13, 95% CI, 1.02, 1.25) are more likely to be food insecure.
CONCLUSION: The prevalence of food insecurity among HIV-infected individuals receiving HAART in this resource-rich setting is extremely high, and persists in spite of an apparent abundance of nutritional support services. Further research is needed to identify the primary causes and determinants of food insecurity in this population.

O040
MANCOUNT 2008: PRE-COITAL DOUCHING (PD), SEXUALITY AND THE ASSOCIATION WITH RISK AMONG MEN WHO HAVE SEX WITH MEN (MSM) IN VANCOUVER

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BACKGROUND: There has been a reluctance to address bodily functions in regards to sexual hygiene such as PD among MSM by many health practitioners. As a result, there is a dearth of knowledge existing in the literature. We investigated this bodily function in M-Track, a second-generation surveillance system designed to monitor the prevalence of HIV and other sexually transmitted infections (STI) and associated risks among MSM.
METHODS: In addition to a series of socio-demographic, drug use, partner-related, and health access questions, participants were asked questions about bodily functions, including if they had douched before anal sex in the past 6 months. We examined the prevalence and factors associated with a positive response to PD in the past 6 months using bivariate and multivariate logistic regression techniques.
RESULTS: Preliminary data collected from 733 participants between August 1 and December 20, 2008, indicated that 235 (32.1%) participants reported PD. In multivariate analysis, participants who reported PD were significantly more likely to use nitrate inhalants (poppers) 2 hours before sex (odds ratio [OR] 2.21, 95% confidence interval [CI] 1.52-3.21), and engage in group sex (i.e. 2 or more partners) (OR 2.02, 95% CI 1.39-2.94), semen exchange (OR 1.66, 95% CI 1.15-2.39), and receptive brachioproctic eroticism (fisting) (OR 3.66, 95% CI 1.59-8.38). Participants self-reporting a HIV-positive status were also most likely to report PD than HIV-negative participants (OR 1.17, 95% CI 1.14-2.75).
CONCLUSIONS: PD has existed in secrecy in context to health prohibition or silence and these data indicate associations with: poppers, group sex, semen exchange, receptive fisting and being HIV-positive underscoring the importance PD has in the lives of MSM who are receptive in anal sex. PD is likely to occur in advance of anal sex thus is an important consideration in a discourse regarding research and harm reduction for MSM.

Prevention and Women's Issues

O041
THE IMPACT OF TENOFOVIR-BASED HIV PRE-EXPOSURE PROPHYLAXIS ON LIFE EXPECTANCY AND QUALITY-ADJUSTED LIFE EXPECTANCY: A MARKOV COHORT MODEL

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BACKGROUND: HIV pre-exposure prophylaxis (PrEP) is a potential HIV prevention strategy that may decrease HIV transmission in high-risk populations. We created a Markov cohort model to examine the impact of tenofovir-based PrEP on life expectancy and quality-adjusted life expectancy in men who have sex with men (MSM).
METHODS: The base case was a healthy, 25-year-old, Canadian, HIV-negative MSM at high risk of HIV acquisition, with no baseline gastrointestinal, renal or metabolic conditions. The model used an individual perspective, a time horizon of 50 years and a cycle length of 3 months. Two HIV prevention strategies were evaluated: using PrEP and not using PrEP. Outcome measures were life expectancy and quality-adjusted life years (QALY), and were discounted to present value at 3% per annum.
RESULTS: The PrEP strategy yielded a discounted life expectancy of 24.9 years and 24.3 QALY and the strategy without PrEP, a life expectancy of 24.2 years and 22.4 QALY. Choice of strategy was sensitive to the decrease in quality of life associated with daily use of medications, but not to the risk of gastrointestinal toxicity, renal toxicity or lactic acidosis; the utility of living with adverse events or with HIV infection; nor the impact of HIV infection on mortality. PrEP was no longer favoured when the annual rate of HIV infection was <0.005 or when the efficacy of PrEP in preventing HIV infection was below 8.8%.
CONCLUSIONS: Based on the best available data, the use of tenofovir-based PrEP is expected to increase quality-adjusted and -unadjusted life expectancy in high-risk Canadian MSM. The burden associated with daily medication use, but not the risk or impact of drug toxicities, affected the preferred strategy. Further analyses incorporating economic costs are needed to determine whether this is likely to represent a cost-effective HIV prevention strategy in Canada.

O042
EIGHT YEARS EXPERIENCE OF PROPHYLAXIS AFTER SEXUAL EXPOSURE TO HIV

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OBJECTIVE: Describe non-occupational post-exposure prophylaxis (PEP) use in a large urban sexual health clinic cohort.
METHODS: All patients consulting at Clinique l'Actuel for PEP since 2000, were recruited in this prospective study. Patients were assessed at day 1, and then followed for 6 months. Decision to administer PEP was based on risk evaluation. We investigated the major determinants of completion of PEP follow-up (FU). PEP FU was considered complete if the patient came back for HIV screening 3 or 6 months after exposition. Determinants were analysed by multiple logistic regression.
RESULTS: 639 consultations (84% male, median age 33 years) for PEP were included. 81% of the consultations were for a first PEP and 86% for a moderate/severe risk of exposure. No changes in characteristics of patients consulting for PEP over time were observed. Reason for consultation was 55% of homosexual risky contact, 31% of intercourse with an HIV+ partner, 9% with a sex worker, and 3% with a partner from an endemic region. Median delay before consultation was 29 hours, without significant variation over time (p=0.289). Risk assessment drove PEP administration, with 98% of patients treated after a high risk, 87% treated after a moderate risk

and 19% after a minor risk of exposition. Regimen most often used was a combination of CBV-LPV with a shift to TVD-LPV since 2007. 68% of treated patients complained of adverse effects. Only 50% of the patients completed FU. Complete FU was more likely in patients with moderate/severe risk of exposition (OR=2.409; p <0.001), in men (OR=1.642; p=0.032) and in older patients (OR=1.045; p <0.001).

CONCLUSION: High risk sexual behaviour is common in our cohort. PEP may be an effective prevention strategy, as repeat PEP consultation was rare. Low rates of seroconversion in this high risk population suggests a preventive effect for these patients. While the high rate of loss to follow up is a limitation, those most at risk were more likely to complete follow-up, giving added opportunities for prevention counselling.

O043
DEVELOPMENT OF CANADIAN EVIDENCE-BASED GUIDELINES ON SAFE PREGNANCY PLANNING FOR HIV-POSITIVE INDIVIDUALS

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BACKGROUND: Improvement in life expectancy and quality of life for HIV-positive individuals coupled with reduced vertical transmission has lead to numerous HIV-positive individuals to consider becoming pregnant and having a family. However, attempts at pregnancy planning in the setting of HIV carries risk of horizontal transmission. Our objective was to comprehensively evaluate the relevant literature, and to derive evidence-based guidelines for safe pregnancy planning and conception for HIV-positive individuals.

METHODS: A systematic review was undertaken to identify published manuscripts and presented abstracts dealing with the following questions but not limited to: 1. What are the risks of transmission for discordant couples (i.HIV+ woman and HIV– man and ii.HIV+ man and HIV– woman) and recommendations for conception? 2. What are the risks of transmission for HIV+ couples (HIV+ man and woman) and recommendations for conception? 3. What are the recommendations for conception for single HIV+ individuals, same sex couples or couples with donor sperm, seeking donor sperm, egg donation or a surrogate? 4. What are the recommendations for conception for HIV+ individuals or couples afflicted with fertility issues? Identified manuscripts were abstracted, graded, and a level of evidence assigned by a panel of experts during scheduled teleconferences and at a face-to-face meeting.

RESULTS: A guidelines development team of over thirty Canadian experts including clinical HIV experts, fertility experts, obstetricians, midwives, pediatricians, community members and policy advisors were assembled. The relevant literature was abstracted and a literature review produced with preliminary grading assigned addressing each question above. Final recommendations by the development team for the questions above were agreed upon at the face-to-face meeting and will be reported on.

CONCLUSIONS: These guidelines, with appropriate input from clinicians, researchers, community members and policy makers, will enable safe conception for HIV-positive individuals and couples, which is a crucial topic for the community.

O044
PERINATAL HIV TRANSMISSION AND MATERNAL VIRAL LOAD: DATA FROM THE CANADIAN PERINATAL HIV SURVEILLANCE PROGRAM

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OBJECTIVE: To describe vertical (VT) rates, demographic parameters of mother-infant pairs (MIP) and maternal viral loads close to delivery in the Canadian cohort.

METHODS: The CPHSP collects maternal and infant data including demographics, antiretroviral treatment, viral load and infant outcome annually on children born to HIV+ mothers from 21 pediatric sites across Canada. MIPs are included in the prospective perinatal cohort if the infant is identified as being HIV exposed within 3 months of birth. Since 2008, the data is collected via a web-based system housed and managed at the Canadian HIV Trials Network (CTN). The national data is analyzed annually. Cumulative and 2008 data will be presented.

RESULTS: Among 195 exposed MIP identified perinatally in 2007, 82.6% mothers received HAART (VT 0%), 4.1% some ART (VT 0%) and 13.3% no therapy (VT 3.8%-1 infant). HAART regimens contained a PI (71.6%), NNRTI (11.8%), both (15.4%) or NRTIs only (1.2%). In 2007, 61.5% (120) mothers had acquired HIV heterosexually and 25.6% (50) through IDU. Three mothers (1.5%) had acquired HIV through perinatal transmission. Maternal ethnicity was 46% Black and 23% Aboriginal.

Between 2004-2008, viral loads were undetectable during the 4 weeks prior to delivery in 69% of 110 women on HAART (n=76, VT 1 infant), 50-1000 copies/ml in 18.2% (n=20, no VT) and >1000 copies/ml in 12.7% (n=14, no VT).

CONCLUSIONS: Canadian VT rates have decreased in keeping with other developed countries following intensive efforts to diagnose, offer HAART and closely follow HIV+ women in pregnancy. However, viral loads remain detectable in 31% of women in the month preceding delivery. A detectable VL infers higher risks of both VT and emergence of viral resistance for the mother. Further analysis of impact of maternal characteristics, type of HAART and adherence will assist in better understanding this concerning data.

O045
IMPACT OF TYPE OF ANTIRETROVIRAL THERAPY ON VIROLOGIC SUPPRESSION AT BIRTH IN HAART TREATED PREGNANT WOMEN

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BACKGROUND: HAART in pregnancy is important for both maternal treatment and prevention of MTCT. Rapid and sustained virologic suppression is critical both to prevent MTCT and to prevent resistance in the mother. Various HAART regimens have been used, most frequently including nevirapine (NVP) nelfinavir (NFV), or Kaletra (LPV/r). We hypothesized that LPV/r-based HAART would be more likely to result in virologic suppression at delivery than NFV- or NVP-based HAART.

METHODS: A population based prospective cohort dataset of all HIV positive pregnancies treated with antiretroviral therapy in BC from 1994-2007 was used for analysis; All singleton pregnancies resulting in live births in which NVP, NFV, or LPV/r containing HAART were analysed for the primary outcome of virologic suppression (<50c/ml) at delivery. Hierarchical logistic regression was used to determine which variables influenced virologic suppression.

RESULTS: From 01/94 to 12/07, 211 singleton pregnancies treated with HAART resulted in a live birth. Overall, virologic suppression was achieved in 72.7% at delivery. Of these, treatments included NVP (n=61), NFV (n=95), and LPV/r (n=20) combinations, and rates of virologic suppression were, 69%, 74% and 80% respectively. Increased ART duration (OR=3.71, p=0.003), better adherence (OR=3.29, p=0.004), higher pre-treatment CD4 counts (OR=1.77, p=0.011) and lower pretreatment viral loads (OR=0.43, p=0.011) predicted an increased likelihood of viral suppression at delivery. These variables remained significant predictors after controlling for other potential predictors (type of HAART, maternal age, ethnicity, duration of HAART, adherence, maternal HCV status, injection drug use during pregnancy and viral load and CD4 counts before HAART initiation.). HAART type was not predictive of viral suppression at delivery.

CONCLUSIONS: Factors that most significantly predicted virologic suppression were CD4 and viral load pre-treatment, duration of therapy and adherence. In this study, with limited LPV/r treated pregnancies, LPV/r was not superior to NFV or NVP in achieving virologic suppression at delivery.

O046
ANTIRETROVIRAL ADHERENCE DURING PREGNANCY AND POSTPARTUM AMONG HIV-POSITIVE WOMEN ENROLLED IN THE DRUG TREATMENT PROGRAM IN BRITISH COLUMBIA, CANADA

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BACKGROUND: Adherence to Highly Active Antiretroviral Therapy (HAART) is critical to achieve maternal health and to prevent mother-to-child-transmission of HIV. We sought to compare antepartum and postpartum HAART adherence and to identify factors associated with adherence among antepartum and postpartum HIV-positive women.
METHODS: Using data from the BC Drug Treatment Program (DTP) database and the Provincial Perinatal database, we identified HIV-positive pregnant women (n=194) who commenced HAART between 1993 and 2006, either before or during their pregnancy. Of these women, 84 had postpartum data available for the current analysis. Adherence (≥95%) measures were acquired from pharmacy-refill data and were compared at five time periods: during the third trimester and at three, six, nine, and 12 months postpartum. Data were censored at June 30th, 2008. Multivariate Generalized Estimating Equations (GEE) were fit to compare antepartum and postpartum adherence and to identify which factors were associated with ≥95% adherence.
RESULTS: Adherence (≥95%) was observed in 56% (47/84) of women in their 3rd trimester and significantly decreased with each subsequent time interval of postpartum follow-up (24% (20/83) at three months, 20% (16/81) at six months, 17% (13/78) at nine months, and 14% (10/73) at 12 months ($p < 0.001$)). After adjustment for confounders, women were significantly more likely to have ≥95% adherence during pregnancy compared with postpartum (AOR: 8.57; 95% CI: 4.50, 16.20). Adherence was also significantly associated with lower CD4 cell counts at baseline and living in the Vancouver Coastal Health Authority.
CONCLUSIONS: Adherence to HAART is significantly better during pregnancy than postpartum, but still low overall. Determination of factors impacting antepartum and postpartum adherence should be further evaluated to inform interventions aimed at improving adherence in this critical time period.

O047
PREGNANCY IN THE HAART ERA

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BACKGROUND: With the improvements in HIV therapy, women are living longer and the risk of MTCT is decreased. Consequently, more women are considering their fertility options.
OBJECTIVES: To determine the rate of pregnancy over time in an HIV tertiary care setting and to determine the change in the management of pregnancy among HIV positive women over time.
METHODS: Information on all pregnancies was recorded for women who are currently attending the University Health Network Immunodeficiency Clinic, including those pregnancies which took place before the women started attending the clinic.
RESULTS: 192 women are currently attending the UHN immunodeficiency clinic and were <50 years of age at their first visit. 286 pregnancies have occurred among 98 women. Of these, 105 pregnancies in 67 women were known to occur after the woman tested HIV+. The median age of these 67 women at their first HIV+ pregnancy was 30 (IQR 27, 34), the median year of first positive HIV was 2001 (IQR 1997, 2003), 3% were IDU and 69% had immigrated to Canada within 10 years of first attending the clinic. 77% were from endemic country. The median number of pregnancies per woman since testing HIV positive was 1 (IQR 1, 2, range 1-4). 42 women (65%) were diagnosed with HIV during the pregnancy. Of the 105 pregnancies, 77 (73%) resulted in live births. Comparing the pre-HAART (prior to 1997) to the post HAART era (after 1997), the proportion of pregnancies resulting in live births has increased from 5/11 (45%) to 72/94 (77%) and the number of elective abortions has decreased from 6/11 (55%) to 12/94 (13%). The proportions delivered by caesarean section in the two eras were 0/5 (0%) and 26/72 (36%).
CONCLUSION: Over time the proportion of women with HIV becoming pregnant and continuing their pregnancy has increased. Data will also be presented on the type of ARV treatment during pregnancy, the number of women who discontinue treatment after delivery and the rates of mother-to-child-transmission by HAART era.

O048
LIMITED ACCESS TO FERTILITY SERVICES AND ADVANCED REPRODUCTIVE TECHNOLOGIES FOR HIV-POSITIVE INDIVIDUALS AND COUPLES IN CERTAIN PARTS OF CANADA

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OBJECTIVE: To identify underserviced areas in Canada with respect to access to fertility services and advanced reproductive technologies for HIV-positive individuals and couples.
METHODS: A survey was sent to all fertility clinics in Canada registered with the Canadian Fertility and Andrology Society by email or fax. The survey contained questions regarding the availability of services (investigations and treatment) for HIV-positive men and women for infertility and/or risk reduction in achieving pregnancy. Non-responders were re-contacted twice.
RESULTS: Completed surveys were received from 23 of 28 (82%) clinics in eight provinces across Canada. Although at least one clinic in each of the eight provinces would accept HIV-positive men and/or women in consultation, 22% reported being unwilling to see HIV-positive individuals (one in British Columbia and four in Ontario). At least one clinic in each province was willing to offer infertility investigations, but access to fertility treatments was much more limited. The most commonly available treatment was intrauterine insemination for couples in which the female partner was HIV-positive, being offered in at least one clinic in every province except New Brunswick. Other treatments were much more difficult to access. Sperm washing for couples in which the male partner was HIV-positive was offered by only 26% (6/23) of clinics, and was unavailable in British Columbia, Saskatchewan, Quebec or New Brunswick. In vitro fertilization for couples in which the female partner was HIV-positive was offered by only 4 clinics (17%), and was not available in British Columbia, Saskatchewan, Manitoba, Quebec, New Brunswick or Nova Scotia.
CONCLUSIONS: In this national survey of fertility clinics across Canada, HIV-positive individuals living in several provinces have limited or no access to services. Policy makers should focus on expanding access to include all regions across the country.

Social, Environmental and Structural Aspects of HIV Risk

O049
EXPLORING YOUNG PEOPLE'S INITIATION INTO A LOCAL DRUG SCENE IN VANCOUVER, CANADA

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BACKGROUND: Recent research has highlighted the ways in which the social-structural processes and physical environments of drug scenes operate to push young people towards HIV-related risk behaviors and numerous drug-related harms. We undertook this study in order to explore how young drug users characterize and understand their initiation into the downtown drug scene in Vancouver, Canada.
METHODS: Semi-structured qualitative interviews were conducted with 39 individuals recruited from a cohort of young drug users known as the At-Risk Youth Study (ARYS). Audio-recorded interviews elicited youth perspectives on becoming involved in the Vancouver drug scene. Interviews were transcribed verbatim and a thematic analysis was conducted.
RESULTS: Structural and social factors such as childhood exposure to addiction, unstable housing and negative experiences with police played a role in pushing young people towards involvement in the drug scene, and in accelerating subsequent involvement later in life. Further, individual factors such as a desire for excitement, independence and belonging (understood in the context of family dysfunction and/or social exclusion) initially pulled young people towards drug-using milieus. However, once

initiated into the local scene, participants identified several factors that accelerated the harms of drug scene involvement, including self-reported problematic drug use, intensified need to generate income, unstable social relationships and homelessness. As these dynamics became more prominent, young people found themselves increasingly entrenched within the local scene and unable to envision or enact exits from this environment.
CONCLUSIONS: Our findings stress the need for early intervention with youth who are exposed to the various push and pull factors that lead to drug scene involvement, before they are initiated into the social networks and processes that rapidly propel young people towards risk. We found that once initiation has occurred, the boundary between safety and risk becomes increasingly difficult to navigate, and young people become highly vulnerable to numerous harms, including HIV infection.

O050
QUEERING THE CONSTRUCTS OF MASCULINITY: A METHODOLOGICAL FRAMEWORK FOR INVESTIGATING HIV PREVENTION STRATEGIES AIMED AT YOUNG GAY MEN

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This presentation will offer a theoretical and methodological framework for investigating the sexual health practices of Young Gay Men (YGM) in the "post-AIDS" era. Recent research in the field of HIV prevention has suggested that education and dissemination of "safer" sex practices alone does not result in lowering transmission rates, particularly among YGM who may be at greater risk for seroconversion. Through a queer and masculinities theoretical lens, this discussion will present a case study methodology to address the gap in health promotion efforts which often rely on risk and death aversion to engage recipients. A sanitized version of sex has often been promoted through health promotion rhetoric which has in turn encountered resistance against masculine discourse among some gay men. From a postmodern perspective, we come to understand the gender, sex, sexual orientation and sexual identity as unstable categories of reference that nonetheless have the power to organize societies in pervasive and utilitarian ways. While gay men have personal agency, their sexual acts are gendered and imbued with meaning beyond the moment of engagement. This understanding of sexual practice is critical for health promotion programs and policies because it illustrates how, for example, HIV prevention education may be insufficient in reducing actual HIV transmission. The current state of gay men's sexual health in relation to HIV is deeply enmeshed with the social conditions of modern culture, conditions which are at least in part created and maintained through health promotion efforts that may lack a nuanced, theoretical and methodologically appropriate fashion. This framework will contribute to the methodological gap in health promotion efforts aimed at the sexual health of YGM.

O051
DO NEEDLE EXCHANGE PROGRAMS (NEPS) DISTRIBUTE NEEDLES AND OTHER HARM REDUCTION EQUIPMENT ACCORDING TO BEST PRACTICE RECOMMENDATIONS

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Needle exchange programs (NEPs) are key components of HIV and hepatitis prevention efforts. Two years following the release of a best practice recommendations document for NEPs, the only resource of its kind in Canada, we evaluated their uptake by Ontario NEPs. We sought to identify facilitators as well as modifiable barriers to best practice implementation.
Using an online survey, we asked 32 core NEP managers (100% response rate) and 62 partner agency managers (63% response rate) about their practices and policies before and after the release of the best practice recommendations. As well, we conducted semi-structured key informant interviews with a convenience sample of medical officers of health
The majority of programs reported following best practices related to the distribution and disposal of needles. Most programs distributed injection-related equipment according to best practices. For example, 88% (n=28) of core programs and 84% (n=52) of partner agencies distributed drug cookers/spoons. Although more programs began to distribute equipment used for smoking drugs (i.e., glass stems/pipes, screens), the majority do not distribute these items. However, a higher proportion of partner agencies (44%, n=27) distributed glass stems/pipes than the core programs (16%, n=5). Despite reports of positive relationships with the police, few programs followed recommendations such as providing police training and establishing protocols to resolve conflicts. Commonly cited facilitators for change included the best practice recommendations document and new funding mechanisms, while implementation barriers included lack of funding, senior management and political decision-making.
Ensuring that drug users receive enough injection equipment as well as equipment for smoking drugs has important implications for reducing risk and disease transmission. Our findings suggest that senior agency decision makers can impede or facilitate implementation of NEP best practices. Development of region-specific best practice documents and knowledge transfer activities directed towards decision makers and NEP staff can help improve service delivery. NEPs in other regions desiring service enhancements may find this to be a successful strategy.

O052
STREET-BASED DRUG SCENE EXPOSURE AND HEALTH RISKS AMONG INJECTION DRUG USERS: THE RELATIONSHIP BETWEEN 'PLACE' AND HIV RISK

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BACKGROUND: In recent years, there has been growing interest in environmental and social determinants of HIV risk behaviour and infection, and increasing attention has been given to the role of 'place' in shaping HIV risk. One key emerging 'place' of interest is illicit street-based drug scenes. We sought to determine whether exposure to street-based drug scenes among people who inject drugs (IDU) was associated with known HIV risk factors.
METHODS: Data were derived from a prospective cohort study known as the Vancouver Injection Drug Users Study. Drug scene exposure was defined as living in or frequenting Vancouver's drug use epicenter and spending on average five or more hours on the street each day. We used generalized estimating equations (GEE) to identify the prevalence and correlates of drug scene exposure during the period of May 2006 to June 2008.
RESULTS: Among our sample of 1049 IDU, at some point during follow-up, a total of 653 (62%) fit the criteria for drug scene exposure. After controlling for a range of factors, variables that remained independently associated with drug scene exposure in multivariate GEE analysis included unstable housing (Adjusted Odds Ratio [AOR] = 3.53), daily crack use (AOR = 1.91), outdoor assisted injecting (AOR = 1.80), and sex work involvement (AOR = 1.51).
CONCLUSION: Our findings indicate that drug scene exposure is linked with known predictors of HIV infection such as involvement in sex work and outdoor assisted injection. This analysis highlights the importance of considering environmental factors in the production of HIV risk, and suggests that efforts to modify the risk environment and moderate exposure to street-based drug scenes may serve to reduce HIV transmission among IDU. Potential interventions include supervised drug consumption facilities, low threshold employment opportunities and stable housing options.

O053
PERCEPTIONS OF RISK AMONG WOMEN WHO WORK IN THE INDOOR COMMERCIAL SEX INDUSTRY IN VANCOUVER, CANADA

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BACKGROUND: Epidemiological evidence indicates that women who work in indoor sex establishments (CSW) are at risk for sexually transmitted infections (STI), including HIV. Equally important is how 'risk' is understood and acted upon by CSW during interactions with clients. Such an approach is essential to the development of appropriate healthcare interventions.
METHODS: A qualitative study was undertaken within 18 indoor establishments. Data collection included in-depth interviews (n=21) with CSW and field observations. Interviews focused on work experiences, HIV and

STI knowledge, experiences and understandings of HIV and STI risk and risk-reduction strategies, and experiences with healthcare service utilization. Because ethnicity, gender, and social class emerged as salient analytical perspectives, elements of 'intersectionality' were used to interpret the results.
RESULTS: CSW perceived themselves to be at significant risk for HIV as a result of their work. Particularly in the case of migrant CSW, perceived risk was rooted in unclear understandings of modes of transmissions of HIV and different STI, as well as in feelings of powerlessness to negotiate condom use, largely as a result of language barriers and aggression on the part of clients. Perceived risk was exacerbated by difficulties in accessing HIV education and testing services. We found that migrant CSW in particular have limited access to HIV education and testing, even though they express a strong desire for it in order to ameliorate the emotional stress that accompanies a high level of perceived risk.
CONCLUSIONS: Results indicate that CSW perceive themselves to be at significant risk for HIV, yet feel unsupported in their efforts to mediate those risks. Our findings stress the need for novel educational and workplace safety interventions with CSW – and in particular migrant women who work in the indoor sex industry – in order to address the physical harms and emotional stress experienced by this highly vulnerable population.

O054
THE INTERNET IN THE SEXUAL LIVES OF MSM: IMPLICATIONS FOR PREVENTION

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BACKGROUND: The Men, Internet and Sex with Men (MISM) Study was a qualitative inquiry into the role of the Internet in the sexual lives of men who have sex with men (MSM). In light of calls for HIV prevention to be more responsive to men's own sexual experiences, this study brought sociological inquiry to online sex seeking to provide insight into innovative HIV prevention.
METHODS: 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).
RESULTS: Men's use of the Internet in their sexual lives tended to vary by their sexual orientation: gay men used the Internet as an adjunct sex seeking venue, whereas the Internet was often the exclusive source of same-sex connection for non-gay-identified men. The Internet provides unique advantages and disadvantages for HIV prevention. For example, online profiles allow safer sex intentions to be clearly conveyed, pre-meeting chats can facilitate safer sex negotiation, and users can learn more about their potential casual partners than may be possible elsewhere. However, these protections were not infallible, and instances of unplanned unprotected sex occurred among men in the sample. Men also talked about their experiences of planned unprotected sex. Analysis of the unprotected sexual encounters revealed how unprotected sex was rationalized and socially-situated.
CONCLUSIONS: Understanding the Internet in the sex lives of MSM, and its role in unprotected sex, requires a focus on the contextual factors which lead men to the Internet and which influence the sexual encounter. HIV prevention needs to respond to the unique attributes the Internet contributes to the process of finding a sex partner, as well as to issues of risk reduction and agency in sexual negotiation.

O055
EXAMINING FOOD INSECURITY AND ITS ASSOCIATED FACTORS IN PEOPLE LIVING WITH HIV IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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BACKGROUND: There is limited research in Canada on food security and its associated determinants of health in people living with HIV/AIDS.
METHODS: As part of our CIHR-funded HIV, Housing and health study in Ontario – The Positive Spaces, Healthy Places Study – we enrolled 605 people living with HIV from across Ontario and followed them over one year using both quantitative population health surveys / instruments and qualitative interviews conducted by peer research assistants. In the current study, we examine the univariate and multivariate factors associated with food insecurity.
RESULTS: At baseline, 57% experienced difficulty in buying enough food over the past year and 57% received food bank services in the past 3 months. Univariate factors significantly associated with increased difficulty in buying food included: age (RR = 0.96), Gender (being female, RR = 0.6), sexual orientation (identifying as heterosexual, RR = 2.0), unemployment (RR = 0.6), income (RR = 0.6), homelessness at least once (RR = 1.9), experience of housing discrimination (RR = 1.9), and significant depression (RR = 2.4); in multivariate model building, age, sexual orientation, employment status, housing-related discrimination and depression remained significant ($p < 0.05$). Univariate factors significantly related to access to food bank services included: age (RR = 0.98), identifying as Aboriginal (RR = 2.0), less than 12 yrs of education (RR = 0.5), unemployment (RR = 0.6), having annual income < $ 13,700 (RR = 0.6), history of incarceration (RR = 3.1), living outside of the GTA (RR = 0.7), homeless at least once (RR = 2.3), experiencing housing-related discrimination (RR = 1.8), endorsing harmful alcohol and drug use (RR = 2.7 and 2.7) and experiencing depression (RR = 1.6); in multivariate model building, homelessness remained as the only significant factor ($p < 0.05$).
CONCLUSIONS: Policy makers and providers of housing and support services need to be attuned to food insecurity issues for people with HIV, particularly for women, those with mental health and significant substance use issues and those who have previously been incarcerated.

O056
SOCIAL AND STRUCTURAL BARRIERS TO HOUSING AMONG STREET-INVOLVED YOUTH

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OBJECTIVES: In Canada, approximately 150,000 youth live on the street. Street-involvement and homelessness have been associated with various risks, including injection drug use and HIV infection. We undertook a qualitative study to better understand the social and structural barriers street-involved youth encounter when seeking housing, in Vancouver.
METHODS: We conducted 39 semi-structured interviews with street-involved youth (aged 16-26) who have a history of substance use. All interviews were thematically analyzed, with particular emphasis on participants' perspectives regarding their housing situation and their experiences with seeking housing.
RESULTS: The results of this analysis indicate that street-involved youth experience a wide range of barriers when seeking shelter and housing. Structural barriers commonly experienced by youth include a lack of formal support in securing housing and appropriate income support, as well as barriers related to overly restrictive and abstinence-based shelters. Many youth identified inflexible shelter rules and a lack of privacy as outweighing the benefits of sleeping indoors. Youth also reported social barriers, such as a lack of trust between shelter staff and youth, as well as discrimination when seeking more permanent housing. As a result, some youth relied on single-room occupancy hotels for temporary shelter, although residing in such accommodations was viewed as dangerous and as giving up hope for a return to mainstream society.
CONCLUSIONS: Our findings shed light on the social and structural barriers street-involved youth face in attaining housing and illuminate important avenues for HIV prevention interventions among street-involved youth that extend beyond the individual level. Our study highlights the need for well resourced youth housing services, which include a continuum of safe housing options, ranging from low-threshold shelter to more structured abstinence-focused housing. Such an inclusive housing approach has the potential to allow youth to move towards a reduction in their drug use and HIV risk behaviours.

Resistance

O057
DIFFERENCES IN INCORPORATION AND EXCISION OF ADENOSINE ANALOGUES GS-9148 AND TENOFOVIR BY HIV-1 REVERSE TRANSCRIPTASE

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GS-9148 is an investigational nucleotide analogue RT inhibitor (NtRTI) whose prodrug, GS-9131, is in clinical development. GS-9148-diphosphate (GS-9148-DP), the active metabolite of GS-9131, and tenofovir diphosphate (TFV-DP) are both analogues of dATP and compete with the natural nucleotide for incorporation by RT. GS-9148 contains a 2'fluorine on its 2'-3'-dideoxy-2'3'-didehydro sugar ring, while TFV contains an acyclic linker. The effects of the chemical nature of the sugar-like moiety on the efficiency of nucleotide incorporation and excision have not been well characterised. We used a variety of complementary biochemical assays including enzyme kinetics and site-specific footprinting to compare the effects of GS-9148-DP and TFV-DP on DNA synthesis by HIV-1 RT. Initially, the effects of the two compounds were evaluated in dose-response experiments using long templates that permitted multiple incorporation events. The nature of the 3'-end of the primer differentially affects incorporation of the two analogs. Incorporation of TFV-DP is increased following pyrimidines, while GS-9148-DP is preferred following purines. The magnitude of these effects depends on the specific sequence context. Overall, there appears to be a slight advantage for incorporation of TFV-DP. The opposite is seen in the efficiency of excision, and its inhibition through Dead-End Complex (DEC) formation. Excision of GS-9148 is lower and the next nucleotide provides protection at a much lower concentration relative to TFV. These effects are seen both with wild-type HIV-1 RT and enzymes containing thymidine analogue associated mutations (TAMs). Site-specific footprinting revealed that incorporated GS-9148 promotes formation of the post-translocated RT complex that facilitates DEC-formation and diminishes excision. Rates of incorporation and excision are major determinants in assessing the overall inhibition of N(t)RTIs. Our results suggest that relative to TFV-DP, there are subtle sequence-dependent reductions in rates of incorporation of GS-9148-DP that are compensated by diminished excision, which likewise provides better protection against a background of TAMs.

O058
IMPACT OF M36I PROTEASE POLYMORPHISM ON THE SELECTION OF NELFINAVIR AND LOPINAVIR RESISTANCE MUTATIONS IN HIV-1 B AND NON-B SUBTYPES

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OBJECTIVE: To investigate the effect of M36I polymorphism among HIV-1 subtypes AG, B and C on the emergence of drug-resistance mutations in the presence of the protease inhibitors (PIs) nelfinavir (NFV) and lopinavir (LPV) in vitro.
METHODS: AG, B and C subtype-specific full length HIV-1 molecular clones were used to create the M36 and 36I mutants. Reverse transcriptase activity of viruses generated from the above clones was quantified in the presence of NFV and LPV in cord blood mononuclear cells (CBMCs). CBMCs were infected at half the maximal inhibitory concentration of each PI and selection for resistance was performed by growing the cultures under increasing concentrations of NFV and LPV. Each week, culture supernatants were tested for viral replication based on RT activity and PI concentrations were adjusted accordingly. Viruses able to replicate under PI pressure were genotyped and phenotyped to analyze emerging mutational patterns and ascertain the level of resistance to the PIs.
RESULTS: Differences were observed in the acquisition of drug resistance mutations after 25 weeks. Subtype B M36 developed a major LPV resistance mutation V82A, while AG viruses presented with I84V and M46I/I47A. Major LPV mutations were not observed with subtype B 36I, C M36 or C 36I viruses. NFV treatment resulted in the appearance of D30N in B M36, B 36I and C 36I viruses. The NFV concentration required to achieve resistance in B 36I was 10 times less than what occurred with B M36. Despite comparable drug pressure, D30N or L90M mutations did not develop in C M36 and AG subtype viruses. Instead, M46I/L resistance mutations were observed.
CONCLUSIONS: NFV resistance mutations differed between the subtypes; AG did not develop D30N or L90M seen in subtype B and C M36 viruses. The presence of M36I appears to increase drug susceptibility in subtype B viruses for both NFV and LPV. Similar effects were not seen in subtype AG and C viruses. The effect of M36I on PI drug susceptibility and emerging patterns of resistance may vary across different HIV-1 subtypes.

O059
SIGNATURE NUCLEOTIDE POLYMORPHISMS AT POSITIONS 64/65 IN HIV REVERSE TRANSCRIPTASE FAVOR THE SELECTION OF THE K65R RESISTANCE MUTATION IN HIV SUBTYPE C

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BACKGROUND: Several clinical studies have now documented that the K65R resistance mutation is common in sub-Saharan African countries in which subtype C viruses are predominant. Recently, we described a novel nucleotide template-based mechanism that may be the basis for the facilitated acquisition of the K65R resistance mutation in subtype C. Biochemical analysis implicated the nucleotide sequence surrounding amino acid 65 in reverse transcriptase as responsible. We now wished to mechanistically evaluate the propensity of subtype C viruses to acquire K65R in tissue culture.
METHODS: Silent polymorphisms at sites 64 and/or 65 of the subtype C nucleotide consensus sequence were introduced into wild-type subtype B NL4-3 virus. Cell culture drug selections were carried out in MT2 cells using a variety of N(t)RTIs in single or combination drug pressure.
RESULTS: With each of tenofovir (TNF), abacavir (ABC), dideoxyinosine (ddI), and stavudine (d4T), and combinations of any of these with either lamivudine (3TC) or emtricitabine (FTC), the K65R pathway was selected more frequently in a subtype B virus that contained subtype C nucleotide polymorphisms at positions 64/65 than in a wild-type subtype B virus. Both polymorphisms needed to be present in tandem in order for this result to be obtained. Subtype B viruses that contained a subtype C RT were not more prone to acquire K65R than wild-type subtype B viruses.
CONCLUSIONS: The nucleotide sequences surrounding position 65 in the HIV template play an important role in the preferred selection of K65R. This preference is viral template-mediated and is not mediated by the RT enzyme itself. This is the first demonstration of the significance of silent polymorphisms in the development of drug resistance and provides mechanistic understanding on a topic of significance for the treatment of HIV disease in the context of HIV subtype C.

O060
MUTATIONS IN GP41 OF HIV-1 ENVELOPE GENE IMPACT ON RESISTANCE OF CCR5 INHIBITORS

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CCR5 inhibitors, as earlier ARV classes, can emerge drug resistance. In our previous study, many mutations and glycosylation changes were observed in gp41 in addition to gp120 that suggests that the selective pressure may also apply to conserved region of the HIV envelope and may alter fusion kinetics. We sought to evaluate the impact of the gp41 mutations on the phenotypic resistance to CCR5 inhibitors.
METHODS: We performed the site-directed mutagenesis in various gp41 domains corresponding to all glycosylation sites and other mutation sites observed in our clinical isolates. These mutants were tested for viral tropism. We co-transfected these mutants with pN.L4-3Luc.R-E- backbones into 293T cells to make pseudoviruses. These pseudoviruses were used to infect U87.CD4.CCR5 cells and then vicriviroc IC50s were tested using luciferase assay.
RESULTS: All mutants expressed functional HIV envelope glycoproteins as shown by Western Blot. All mutants generated remained R5-tropic. We observed increases in fold-change (FC) IC50 to vicriviroc

in these gp41 mutants (range from 1.26 to 4.31FC). Mutations occurring in the region between HR1 and HR2 showed the highest fold-change: N611Q (4.31 FC), N611K (2.94 FC), N616Q (3.84 FC) and N625Q (3.73 FC). In the HR2 domain, N637Q showed a 3.36 FC. In the region between HR2 and TM, S674N showed a 2.74 FC. In the CT domain, double-mutant (D750N, F752S) was 1.26 FC; N816Q was 4.31 FC and N816K was 3.21 FC. For the same mutation site, different amino acid substitution had different IC50 FC: N611Q vs N611K (4.31 FC vs 2.94 FC), N816Q vs N816K (4.31 FC vs 3.21 FC). Interestingly, two adjacent mutations D750N and F752S occurring on the same mutant showed the lowest in IC50 FC (1.26 FC) instead of higher in IC50 FC.

CONCLUSION: Although gp120, especially V3 loop, plays an important role in the resistance of CCR5 inhibitors, our data suggest that gp41 may have an impact on the resistance to CCR5 inhibitors. But single mutation in gp41 did not produce significant increase in phenotypic resistance.

O061
EVALUATION OF AN AUTOMATED SEQUENCE ANALYSIS TOOL TO STANDARDIZE HIV GENOTYPING RESULTS

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BACKGROUND: Quality assurance programs (QAPs) are an essential component of good laboratory management. Evaluation of HIV genotypic drug resistance testing is challenging due to the complexity of non-standardized, subjective sequence interpretations. Implementation of an automated bioinformatics tool that objectifies sequence interpretation, would allow a QAP to more accurately pinpoint sources of aberrant results. We prospectively evaluated the performance of ReCall, a multifaceted bioinformatics tool, in its capacity to standardize HIV sequence interpretation.

METHODS: 412 HIV specimens were genotyped using standard methods with the output from the automated DNA sequencer re-analyzed by ReCall. The performance of ReCall was measured by both speed and concordance of base calls. Specimens were passed or failed based on criteria pre-established in our laboratory or using preset criteria in ReCall.

RESULTS: There was greater than 99% agreement in base calling between our laboratory and ReCall over more than 300,000 bases. Most of the discordant base calls were at positions that were identified as a mixed base by one but not the other process. No bias toward calling more mixtures by one method was identified. Discordance in passing/failing specimens, based on overall quality, was due to different rules for approving sequences. Time for analysis using ReCall was less than 2h as compared to an estimated 40h of technician time.

CONCLUSION: In a prospective analysis, ReCall showed excellent agreement with subjective human interpretation of HIV sequence data. Without human intervention, ReCall still rapidly produced unbiased, consistent results on a dataset generated by different methods in an outside laboratory. By standardizing sequence interpretation, ReCall will allow a QAP to evaluate the pre-analytic/analytic laboratory process independent of the sequence interpretation steps. In addition, through objective sequence interpretation and additional quality control analysis, ReCall could ensure that consistent, high quality data is collated for international collaborative HIV research.

O062
RESISTANCE TO ETRAVIRINE IN INJECTION DRUG USERS FAILING FIRST-LINE NNRTI-BASED HAART

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BACKGROUND: Etravirine (ETV) is a novel NNRTI that shows activity in the face of 1-2 NNRTI resistance-associated mutations (RAMs). However, the efficacy of ETV may be reduced as additional NNRTI RAMs accumulate over time. We evaluated the prevalence of ETV RAMs in injection drug users IDUs experiencing a virologic breakthrough on NNRTI-based HAART.

METHODS: In this retrospective observational study, we identified all individuals who were prescribed their first NNRTI-based HAART. All patients experiencing virologic breakthrough (HIV plasma viral load > 250 copies/mL) while on NNRTIs were included. Genotypic resistance testing, done before and after exposure to NNRTIs, was completed using the vircoTYPE HIV-1 assay (VIRCO, Mechelen, Belgium). Resistance to nevirapine (NVP), efavirenz (EFV), delavirdine (DLV) and ETV was defined using the IAS-USA mutation table (2008 revision). Isolates carrying 3 or more ETV RAMs were considered to be resistant to ETV.

RESULTS: We included 86 subjects (51 male, mean age 39 years, 81 HCV antibody positive, 20 antiretroviral naive) with a mean follow-up period of 18.5 months. Patients received NVP (74.4%), EFV (19.8%) or DLV (5.8%)-based HAART along with 2 other NRTIs. At baseline, mean CD4 cell count and median plasma viral load were 240 cells/mm^3 and 65000 copies/mL, respectively. Following virologic breakthrough, isolates were identified with zero (34, 39.5%), one (19, 22.1%), two (18, 20.9%) and three or more (15, 17.4%) NNRTI RAMs. The most commonly occurring mutations were K103N (36.0%) and Y181C (29.1%). The prevalence of zero, 1, 2 and 3 ETV RAMs was 55.8% (n=48), 23.3% (n=20), 17.4% (n=15) and 3.5% (3). No isolate had > 3 ETV RAMs. The ETV specific RAMs were: V90I (1, 1.2%), A98G (0, 0.0%), L100I (2, 2.3%), K101E/P (8, 9.3%), V106I (6, 7.0%), V179D/F/T (1, 1.2%), Y181C/I/V (25, 29.1%) and G190A/S (16, 18.6%).

CONCLUSIONS: Even in patients at high risk of virologic breakthrough on NNRTI-based HAART, the development of ETV resistance was very uncommon. ETV will be an important component of more advanced lines of therapy, even with prior exposure to NNRTIs.

Behavioural and Biomedical Interventions

O063
EVALUATING THE SCALABILITY OF A MOBILE PHONE SUPPORT INTERVENTION FOR PATIENTS ON ANTIRETROVIRAL THERAPY IN RESOURCE-LIMITED SETTINGS

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BACKGROUND: Researchers at the University of Nairobi and University of Manitoba developed a randomized clinical trial to measure the effects of a mobile phone intervention that uses SMS texting to address gaps in monitoring, supporting, and retaining patients taking ART in and around Nairobi.

PURPOSE: This evaluation assesses the feasibility of scaling up the mobile phone intervention in Kenya and similar resource-limited settings.

METHODS: Data on variables such as costs, resources and infrastructure, target populations, support, demand and sustainability were collected through unstructured and semi-structured key stakeholder interviews, the administration of Likert scale questionnaires, researcher observations during project site visits and document review. Key stakeholders included health care workers, government officials, non-governmental organizations and health policymakers in Kenya. Qualitative data were coded and sorted by theme. Descriptive statistics were generated from the survey questionnaires.

RESULTS: Certain factors favour scale-up. 100% of stakeholders surveyed said that the intervention is beneficial to patients and should be scaled up. Some perceived the intervention to be cost-effective. There is demand among healthcare workers, 58% of whom used their own phones and airtime to track patients prior to participating in the intervention. Patients can participate at no personal cost. Challenges cited by stakeholders included the burden of retraining new staff given high turnover in ART clinics, and 54% felt external financial support (ie. donor funding) was necessary.

CONCLUSION: The intervention could feasibly be scaled up if challenges are overcome. The findings of this evaluation demonstrate strong stakeholder buy-in, including political will to scale-up. Cost to participants is manageable in a resource-poor setting. Further research must determine whether this intervention will rely on external funding for set-up and maintenance costs. Although network coverage remains incomplete, mobile phone use is popular and increasing rapidly in Africa, and the intervention is potentially accessible to a growing number of patients on ART. Patient health benefits are being assessed in a clinical trial and cost-effectiveness analysis is needed. Mobile phone interventions may have a role in universal access to ART.

O064
QUALITY OF LIFE AND SEXUAL PRACTICES AMONG HIV POSITIVE INDIVIDUALS ON HAART IN BRITISH COLUMBIA, CANADA

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Investigations into supporting HIV-positive men and women's sexual health and fertility desires are being placed in high priority for HIV researchers and community partners. We therefore investigated the prevalence of being sexually active and the quality of life (QoL) among 457 HIV-positive individuals on HAART in British Columbia, Canada. Two hundred and fifty-one (55%) indicated that they were sexually active in the six months prior to the survey. Seventy percent of gay and bisexual, 47% of heterosexual males and 49% of heterosexual women reported being sexually active. When examining the cohort as a whole, in multivariate analyses, being sexually active was associated with being in a relationship, being either gay, lesbian or transgendered, been violently attacked, having a better body image, and higher scores on QoL subscale on sexual function. There was considerable variation in determinants of sexual activity by sexual orientation. Sexually active gay and bisexual men were more likely to be in a relationship, to ever have used Viagra, to have a higher QoL and sexual functioning, and more likely to have a better body image; heterosexual men who were sexually active were also more likely to be in a relationship, to have a higher QoL score on sexual functioning and more likely to be recently put on therapy; Heterosexual sexually active women were more like to be depressed, to have less disclosure worries, have higher sexual functioning and more like to have been attacked in the last six months or before the age of 16 years. Our results indicate that further engagement with people on HAART and their service providers is needed to ensure that "sex" is on the agenda, supported in ways that are culturally safe, healthy and appropriate and incorporated into long-term HIV management strategies.

O065
UPTAKE OF HIV TESTING IN A LARGE COMMUNITY-BASED STUDY OF INNER CITY RESIDENTS

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OBJECTIVE: To evaluate uptake of HIV testing in a community-based inner city cohort with high rates of illicit drug use.
METHODS: CHASE is a study of Vancouver inner city residents enrolled from January 2003 to June 2004. HIV antibody status was determined through linkages with provincial databases (January 1991 to December 2007). Factors associated with HIV testing and time to first testing following enrollment were evaluated using multiple logistic regression models and Cox Proportional Hazards models.
RESULTS: Among 2,913, 68.9% (n=2,008) had ever received HIV antibody testing (median: 2; IQR: 1-4). Among tested individuals, 15.8% (n=318) tested positive for HIV. Among those with unknown or previous negative testing for HIV at enrolment (n=2,651), 47.5% (n=1,258) had testing up to the end of follow-up. Factors associated with ever receiving HIV testing were non-injection illicit drug use, injection drug use, previous hepatitis A virus vaccination, recent methadone maintenance treatment, and female sex. Older age was inversely associated with HIV testing. Among individuals with unknown or negative testing at enrollment, factors associated with time to first HIV testing included non-injection illicit drug use (HR=1.26, 1.09-1.47, p=0.003), injection drug use (HR=1.24, 1.10-1.41, p <0.001), recent methadone maintenance treatment (HR=1.29, 1.11-1.49, p <0.001) and female sex (HR=1.34, 1.19-1.51, p <0.001), while older age (HR=0.89 per 10 year increase, 0.84-0.94, p <0.001) and having a regular doctor were inversely associated (HR=0.88, 0.78-0.99, p=0.034).
CONCLUSIONS: In this community-based cohort of inner city residents, low rates of HIV testing were observed despite the high-risk environment. Further research is needed to understand why people are not being tested. Improving testing uptake through existing services would identify individuals who could benefit from HIV care and treatment.

O066
CONTRACEPTIVE USE AMONG HIV-POSITIVE WOMEN IN SOWETO, SOUTH AFRICA: THE INFLUENCE OF EXPANDING ACCESS TO HAART

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BACKGROUND: It is currently unknown whether improved access to highly active antiretroviral therapy (HAART) will influence fertility decision-making and contraceptive practices of women in high HIV prevalence and high fertility settings.
METHODS: We used cross-sectional data from an interviewer-administered survey to estimate the association between HAART and contraceptive use, between May and December 2007. Among 715 women (18-44 years) recruited from the Perinatal HIV Research Unit (PHRU) in Soweto, South Africa, 230 were current HAART users (median duration of HAART use = 32.3 months [IQR= 27.7, 33.2]), 238 were HAART-naïve, and 247 were HIV-negative. A medical record review was conducted to confirm clinical variables. Multivariate logistic regression was used to estimate the association between HAART and contraceptive use.
RESULTS: Of 563 non-pregnant, currently sexually active women, the average age was 30 years [SD=6.7], 50% had not completed high school, and 62% were unemployed. Less than 10% of women were currently married and 93% reported being in a sexual relationship. Median parity was 1.0 [IQR 1.0, 2.0] and 55% reported that they are not planning to have any (more) children. Mean CD4 cell count (cells/mm3) of HAART users was 406 [SD=210] and 351 [SD=202] in non-HAART users. Overall, 87% of HAART users, 81% of non-HAART users, and 69% of HIV-negative women reported current use of contraceptive methods ($p < 0.001$). After adjustment for confounders, compared with HIV-negative women, women on HAART were significantly more likely to use contraceptive methods (AOR: 2.62; 95% CI: 1.37, 4.99) and non-HAART users were non-significantly more likely to use contraceptive methods (AOR: 1.58; 95% CI: 0.89, 2.80).
CONCLUSION: The availability of regular HIV care and treatment services appears to be influencing contraceptive practices of HIV-positive women. As access to HAART expands, associated positive impacts are being observed with respect to reproductive health and fertility decision-making.

O067
THE EFFECTIVENESS OF ANTI-ILLICIT DRUG PUBLIC SERVICE ANNOUNCEMENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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BACKGROUND: The prevention of illicit drug use is key to international efforts to control the spread of HIV. To that end, a variety of preventive interventions have been employed in an effort to reduce illicit drug use among youth, including the dissemination of anti-drug public service announcements (PSAs). However, despite the popularity of anti-drug PSAs, these interventions have not been subjected to a systematic evaluation.
METHODS: We searched 10 electronic databases and conference abstracts (from inception of database until July 29, 2008) for evaluations of anti-illicit drug PSAs. We evaluated all studies that assessed intention to use illicit drugs and/or levels of illicit drug use after exposure to anti-drug PSAs. We conducted meta-analyses using a random effects weighted mean difference meta-analysis model.
RESULTS: We identified 7 randomized trials (n = 5,428) and 4 observational trials (n = 17,404). Only one showed a statistically significant benefit of the PSA on intention to use illicit drugs and two found evidence that the PSA significantly increased intention to use drugs. No RCT demonstrated reduced levels of actual illicit drug use. A meta-analysis of the eligible randomized control trials demonstrated no significant effect: 0.15 (95% CI: –0.19, 0.49 [p = 0.382]). Individual observational studies showed evidence of both harmful and beneficial effects and a meta-analysis demonstrated a slight significant effect –0.04 (95% CI: –0.06, –0.01 [p = 0.004]).
INTERPRETATION: Existing evidence suggests that the dissemination of anti-illicit drug PSAs does not demonstrate significant, positive impacts on intentions to use drugs or on actual subsequent patterns of drug use

among youth. The lack of proven benefit and evidence of potential harms should raise questions about the massive resources allocated towards anti-drug PSAs. Further, consideration should be given to alternative methods of preventing the public health harms associated with illicit drug use among youth.

O068
INTEGRATING MALE CIRCUMCISION (MC) INTO HIV PREVENTION EFFORTS: OUR LEARNING IN RWANDA

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BACKGROUND: Three trials have shown that MC can reduce female to male HIV transmission by >50%. Rwanda has declining HIV prevalence, is not a traditionally circumcising nation and is considering policy options for MC.
METHODS: Two surgeons, an ID epidemiologist, an AIDS specialist and a communications specialist recently met with Rwandese colleagues. First, a visit was conducted at Kisumu, Kenya, to learn about established efforts. Activities in Rwanda included surgical exchange and demonstration on MC methods, and meetings with staff and leadership at the Ministry of Health (MoH), medical faculty at the National University of Rwanda, military medical leadership, representatives of foreign funders, UNAIDS staff and Family Health International personnel. The group toured a local health centre, district and referral hospitals, and truck-stop outreach sites and held conversations with clients at these facilities and discussions with several groups representing persons living with HIV.
RESULTS: Rwandese surgeons were already acquainted with UNAIDS methods. Mogen, Gomco and Plastibell methods were demonstrated. Rwandese surgeons are consulting with the MoH on generalizable approaches for the country. Themes emerging from conversations: there is some awareness and uptake of MC for HIV prevention thanks to media and community coverage; networks where people have circumcised friends may predispose; cost in excess of 3000 francs ($6 CDN) was seen as an obstacle; "risk compensation" is a concern so that education is required to reinforce condom use, limitation of partner exchange and safe post-op behaviour; pre-op counseling of attached young men undergoing the procedure should involve the partner; logistics dictate that non-medical personnel must be trained to provide most procedures. The Rwandese MoH has costed neonatal circumcision for the country.
CONCLUSIONS: For sustainability, Rwanda is likely to support a neonatal approach while encouraging adolescent/adult programming. Existing centres of expertise in East Africa could be factored into further training models.

Complications and Other Issues

O069
MANAGING DYSLIPIDEMIA IN THE HAART ERA

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BACKGROUND: Consensus guidelines have been developed for the management of dyslipidemia in the general population based on cardiac risk factors. Whether the same criteria should be used for HAART induced hyperlipidemia in HIV is unclear.
OBJECTIVES: To determine the proportion of patients on HAART attending a tertiary care HIV center who meet criteria for lipid lowering agents (LLA). To determine the factors associated with the initiation of LLA.
METHODS: Data on clinical and demographic characteristics were obtained for individuals on HAART therapy who attended the University Health Network Immunodeficiency Clinic between 2000-2008.
RESULTS: Cardiac risk factors and lipid values were available for 763 patients on HAART therapy. Although 15% of the LDL values could not be determined because of simultaneous high TG values, all patients had at least one valid LDL value. 75 patients on LLA at the initial clinic visit were excluded from analysis. 355 of the remaining 688 (52%) patients qualified for LLA according to the Canadian consensus guidelines when considering both LDL and the TC/HDL ratio and 321/688 (47%) qualified when considering the ratio alone. Of 355 patients who qualified, 243 (68%) were smokers. If all smokers were able to stop, 85/122 (70%) moderate cardiac risk patients would be reclassified as low risk, 38/200 (19%) high risk as moderate risk and 107/200 (54%) would be classified as low risk. 58/243 (24%) smoking patients would no longer be recommended for LLA. 137/321 (43%) patients meeting the guidelines were started on LLA after a median of 3 abnormal (or qualifying) measurements. In logistic models, those with higher risk profiles were more likely to be started on LLA. From Kaplan Meier curves of time since first (second) abnormal measurement, the probability of starting LLA by one and two years were 16% (24%) and 29% (40%) respectively. Of those initiating LLA, target goals were met by 48% within 12 months.
CONCLUSIONS: A high proportion of patients on HAART therapy meet criteria for LLA. If smoking could be eliminated, a large percentage would no longer require therapy by current guidelines.

O070
METABOLIC EFFECTS OF TESAMORELIN (TH9507), A GROWTH HORMONE-RELEASING FACTOR ANALOGUE, IN HIV-INFECTED PATIENTS WITH EXCESS ABDOMINAL FAT. A POOLED ANALYSIS OF 2 MULTICENTER, DOUBLE-BLIND PLACEBO-CONTROLLED PHASE 3 TRIALS WITH 816 RANDOMIZED PATIENTS

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BACKGROUND: HIV patients treated with antiretroviral therapy (ART) often experience increased visceral adipose tissue (VAT). Treatment with daily 2 mg tesamorelin sc has been shown to decrease VAT, while preserving subcutaneous adipose tissue (SAT), and improving triglycerides in 2 randomized, placebo-controlled phase 3 studies. Here, we report pooled analysis from these 2 studies.
METHOD: 816 HIV patients with evidence of abdominal fat accumulation in the context of HIV treatment were randomized in 2 independent studies to receive tesamorelin 2 mg (n=550) or placebo (n=266) sc daily for 26 weeks. The primary endpoint of these studies was the percent change in VAT by CT-scan. Secondary endpoints included lipids and IGF-I level. Safety endpoints included glucose and insulin levels. The studies were analysed by ITT and ANCOVA and had 90% power to detect an 8% reduction in VAT between tesamorelin and placebo.
RESULTS: Baseline age was 48±7 (mean±SD) years and waist circumference 105±9 cm. Baseline characteristics were similar between groups. At Week 26, VAT decreased significantly in tesamorelin-treated patients (–13.1±21.1 vs. 2.3±21.5%, tesamorelin vs. placebo, p <0.001), while no clinically significant changes were observed in limb fat by DEXA (0.2±13.2 vs. 3.0±12.7%, tesamorelin vs. placebo, p=0.001). No significant changes were observed in abdominal SAT (0.8±15.5 vs. 1.3±15.1%, tesamorelin vs. placebo, p=0.08). Treatment with tesamorelin was associated with a significant decrease in triglycerides (–0.4±1.6 vs. 0.1±1.3 mmol/L, tesamorelin vs. placebo, p <0.001). Mean IGF-I levels increased within physiological range in tesamorelin-treated patients (83.4±101%, p <0.001 vs. placebo). Finally, treatment with tesamorelin was overall well tolerated. No significant differences were observed between groups in fasting glucose and insulin as well as 2h-OGTT.
CONCLUSION: These results indicate that treatment with 2 mg tesamorelin daily for 26 weeks results in VAT reduction, preservation of SAT, improvement in triglycerides and is overall well tolerated without significant changes in glucose parameters.

O071
INCIDENCE, PREDICTORS AND SIGNIFICANCE OF SEVERE TOXICITY IN PATIENTS WITH HIV-ASSOCIATED HODGKIN LYMPHOMA

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BACKGROUND: The incidence of Hodgkin lymphoma (HL) in HIV is rising. Standard treatment is ABVD chemotherapy (CT). Vinblastine (V) is metabolized by CYP3A4, which ritonavir (RTV) inhibits, possibly leading to higher V exposure. There is little information on how interactions affect clinical outcome.

METHODS: We retrospectively reviewed 36 patients (pts) with HIV-HL to identify the frequency of neurotoxicity (NT), hematologic toxicity (HT), and lung toxicity (LT) and risk factors for toxicity. Data were collected from the CFE database and from charts.
RESULTS: The median age at HL diagnosis (dx) was 41 years. HL was advanced stage in 78%. Median CD4 count and HIV viral load were 210 cells/ul (n=31) and undetectable (n=25), respectively. 24 pts received HAART with CT. HL CT was: ABVD, 81%; MOPP/ABV, 11%. Infectious complications were: bacterial, n=6; febrile neutropenia, n=4; HSV, n=3; PCP, n=1. Grade 3-4 HT occurred in 18; 15 were on HAART. Grade 3-4 NT occurred in 6 (n=28); 3 were autonomic neuropathy with pseudobowel obstruction. Bleomycin LT occurred in 3 (n=26). CT dose reduction (DR) was required in 9 (n=26). Factors for severe HT were: receiving RTV, p=0.04; and receiving lopinovir (LPV), p=0.02 and for grade 3-4 NT was: LPV, p=0.05. 14 pts received RTV and of 8 receiving LPV, 7 were also receiving RTV (p=0.007). At a median follow-up of 15.3 months 69% are alive. Median OS for all pts was 44.5 months. CT DR portended inferior OS (p=0.04) though only 1 death was from HL.
CONCLUSIONS: Pts with HIV-HL experience an increased incidence of NT while rates of HT and LT are similar to non-HIV HL. The use of RTV or LPV was associated with increased NT suggesting a clinically significant interaction with CT. Prospective studies to devise a rational dosing strategy using measurements of ARV and/or CT levels are warranted.

O072
A COMPARISON OF THE MOS-HIV AND SF-12V2 IN MEASURING THE HEALTH-RELATED QUALITY OF LIFE OF HIV-POSITIVE MEN AND WOMEN

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OBJECTIVE: To examine the relationship between the Medical Outcomes Study-HIV Health Survey (MOS-HIV) and the much shorter SF-12v2 to determine if the SF-12v2 is adequate to assess health-related quality of life of HIV-positive men and women.
METHODS: Eighty-nine HIV-positive men and women who access care at an outpatient HIV clinic in Hamilton and are enrolled in the Canadian HIV Vascular Study, a prospective cohort study examining the relationship between HIV, anti-retroviral therapy and cardiovascular disease, were included in this analysis. Correlations between baseline MOS-HIV and SF-12v2 physical health summary (PHS) and mental health summary (MHS) scores were determined using SPSS v17. Correlation coefficients were calculated to determine the relationship between common domains of the MOS-HIV and SF-12v2 including physical functioning (PF), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF) and mental health (MH). The sub-domains role physical (RP) and role emotional (RE) of the SF-12v2 were compared separately to the domain role functioning (RF) of the MOS-HIV.
RESULTS: The MOS-HIV had mean PHS and MHS summary scores of 48.1 (±11.8) and 50.6 (±9.6) respectively. The mean SF-12v2 PHS and MHS summary scores were lower at 46.8 (±11.5) and 47.3 (±10.0) respectively. The MOS-HIV and SF-12v2 physical health and mental health summary scores were positively correlated ($r=0.874$, $p<0.01$ and $r=0.792$, $p<0.01$). Comparing the MOS-HIV and SF-12v2 common domains including PF, BP, GH, VT, SF, MH and RF yielded positive correlations for all categories (PF: $r=0.905$; BP: $r=0.831$; GH: $r=0.786$; VT: $r=0.815$; SF: $r=0.722$; MH: $r=0.722$; RP: $r=0.742$; RE: $r=0.514$; all significant at $p<0.01$).
CONCLUSIONS: This analysis validates the SF-12v2 – a user friendly questionnaire which takes less than 2 minutes to complete – for measuring health-related quality of life in HIV-positive men and women.

O073
IMPROVING ACCESS AND ADHERENCE TO ARVS IN VANCOUVER'S DOWNTOWN EASTSIDE: THE MAXIMALLY ASSISTED THERAPY (MAT) PROGRAM

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BACKGROUND AND OBJECTIVES: Vancouver's Maximally Assisted Therapy (MAT) Program consists of a multidisciplinary team of nurses, pharmacists, social workers and community workers who support adherence to antiretrovirals (ARVs) for HIV-infected participants with severe social and medical challenges. If patients fail to come to the clinic for daily medication pick-up, the MAT outreach team attempts to locate them and administer their ARVs in the community. Our objective was to describe the MAT program participants and measure adherence and response to treatment.
METHODS: Patients were included if they enrolled in the MAT program prior to 01-Jul-2008 and were on uninterrupted ARV therapy during the study period of July to December 2008. Information on patient demographics, medical history, current and historical plasma viral load, CD4, resistance patterns, was abstracted from medical records. Adherence was calculated as (184-days missed)/184 between 01-Jul and 31-Dec 2008.
RESULTS: The 77 patients meeting inclusion criteria were 72% male, median (interquartile range, IQR) 48 (42-52) years, and 32% aboriginal. Concurrent diagnoses included methadone maintenance 43%, active addiction 86%, mental illness 30%, and Hepatitis C 81%. Current ARV regimens were protease inhibitor-based in 57% and NNRTI-based in 40%. Median (IQR) six month adherence was 99.5 (97-100)%. Outreach support was required for median (IQR) 6 (0-28) days per patient. The most recent viral load was <50 copies/mL in 90% of patients, and 62% had been undetectable for at least 1 year. Median (IQR) CD4 count was 420 (300-580) cells/mL. Resistance to first-line therapy occurred in 17%.
CONCLUSIONS: Despite major challenges including homelessness, poverty, addictions, and mental health issues, patients attending the MAT program are highly successful in maintaining ARV therapy. The multidisciplinary and comprehensive approach to HIV care and treatment developed at the MAT Program is a model that can ensure high levels of ARV adherence.

O074
METHADONE DOSE ADJUSTMENTS WHEN STARTING RALTEGRAVIR-BASED HAART IN HIV-INFECTED INJECTION DRUG USERS

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OBJECTIVES: Pharmacokinetic data suggest that changes in methadone levels following the initiation of highly active antiretroviral therapy (HAART) in injection drug users (IDUs) may represent a major barrier to its use in this population. However, little clinical information is available pertaining to interactions between raltegravir (RGV) and methadone. Within a prospective observational study, we measured the adjustment of methadone doses and responses to treatment after RGV-based HAART was initiated.
METHODS: We evaluated HIV-infected IDUs attending an inner city clinic in Vancouver who were receiving RGV-based HAART and methadone within a directly observed therapy program. Follow-up was according to clinical standards, with changes in methadone dose being made as required to achieve clinical stabilization within the first month of HAART. The change in methadone dosing associated with the initiation of HAART was calculated as the difference between the post- and pre-HAART methadone doses. The most recent on treatment HIV plasma viral load and CD4 cell count were used to evaluate HAART efficacy after initiation of therapy.
RESULTS: The study included 20 subjects (7 female) with a median follow-up period of 107 days. All patients were treatment experienced and co-infected with hepatitis C virus. Most patients received RGV-based HAART along with emtricitabine and tenofovir (n=12). At baseline, the median methadone dose, mean CD4 cell count and median plasma viral load were 77.5 mg/day, 264 cells/mm3 and 963 copies/mL, respectively. At month 1, the median methadone dose was 80.0 mg/day with the observed mean methadone dose change from baseline being 0 mg/day (p=NS). In these patients, 7 (35%) required increases, 2 (10%) required decreases, while 11 (55%) required no change in daily methadone dose from baseline. At most recent follow-up, the mean CD4 cell count was 333 cells/mm3 while virologic suppression (HIV RNA <50 copies/mL) was achieved in 73% of patients receiving RGV-based therapy.
CONCLUSIONS: In accordance with pharmacokinetic studies, our data provide clinical evidence that little (if any) adjustment in methadone dosing is required in patients receiving RGV-based HAART.

Indigenous and Cultural Approaches to HIV Prevention

O075
MISSED HIV PREVENTION OPPORTUNITIES: AFRICAN AND CARIBBEAN WOMEN AND HIV TESTING DURING PREGNANCY

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BACKGROUND: The Ontario prenatal HIV testing program (OPHTP) announced in December 1999 requires that all pregnant women be counselled about HIV, offered testing and tested with informed consent. Though uptake of HIV testing has risen from 38.9% in 1999 to 96.8% in 2008, service providers are not implementing the program uniformly, missing major opportunities to educate women on how to prevent acquisition of and/or transmission of HIV to unborn children and ultimately to sexual partners.

OBJECTIVE OF PRESENTATION: To highlight missed HIV prevention opportunities based on experiences of African and Caribbean women undergoing prenatal HIV testing in Ontario.

METHODS:

1. In-depth interviews were conducted with 44 African and Caribbean HIV negative and positive women residing in Ontario. Interviews are transcribed and analyzed thematically using appropriate theoretical frameworks.
2. Women's medical charts were reviewed to characterize: pattern(s) of prenatal care and information provided during pre and post test counseling

RESULTS: Results from in-depth interviews indicate that majority of women received inadequate pre/post test counseling resulting in: limited awareness of HIV and possibility of transmission of virus to unborn children; fear and panic upon diagnosis based on lack of knowledge on services and plan of action at initial stages; suicidal ideation(s) due to shock and trauma with limited support at time of diagnosis; misunderstanding of role of public health, follow-up protocols and handling of confidentiality and privacy; feelings of violations of autonomy when tested without one's knowledge or consent; and experience\perception of differential treatment based on refugee status, race and/or gender.

CONCLUSIONS: Service providers need to expand HIV education and prevention services for women by maximizing on opportunities provided when women enter the health care system for prenatal care. If implemented effectively, pre/post test HIV counselling provides effective mechanisms for reducing not only maternal HIV transmission but transmission to sexual partners.

O076
HOMOPHOBIA AND ITS IMPLICATIONS FOR HIV TRANSMISSION AND INTERVENTION PROGRAMS IN AFRICAN AND CARIBBEAN COMMUNITIES IN CANADA

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OBJECTIVE: To describe how homophobia is manifest in African and Caribbean communities, and its implications for HIV transmission and intervention programs.

METHODS: Men and women aged 16+ from three East African (Ethiopian, Kenyan and Somali) and three Caribbean (Guyanese, Jamaican and Trinidadian) communities in Toronto participated in a study examining HIV stigma in their country of origin and Canada. We conducted interviews with HIV+ persons (n=30) and focus groups with other community members (n=74). Data related to homophobia were coded using computer-assisted qualitative data analysis software (QSR N6).

RESULTS: Participants described homophobia as being "deep-rooted" in culture, religion, music and law. Expressions of homosexuality are repressed by condemning homosexuals, their families, and friends. Mocking, shame, ostracism, scorn, violence, and prayers for salvation are reported means of keeping homosexuals in the closet or making them "normal." Some homosexuals respond to this stigmatization by moving away from their countries/communities/families, others build supportive networks outside their communities, while others struggle to keep it a secret by "pretending to be heterosexual" – they have opposite-sex partners, get married, have children. A strong sense of responsibility to protect families from harm contributes to the secrecy of homosexuality. HIV infection increases homophobia, although participants reported that fear of homosexuality often supersedes that of HIV. "White/North American" interventions to counter homophobia – such as "coming-out" to families and friends – did not work well, for some participants, resulting in harm to themselves and their families.

CONCLUSIONS: Homophobia, rooted in a need to strengthen the social cohesion of communities by excluding non-conformists, serves to weaken Black communities. With respect to HIV, it increases sexual risk, impedes access to health services and support, and creates misperceptions about HIV transmission. Interventions to counter homophobia and support homosexuals must be specially tailored to these communities, taking into account the cultural and social context.

O077
AFRICAN REFUGEE RESETTLEMENT IN VANCOUVER AND HIV INFECTION

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BACKGROUND: Conflict and HIV have disproportionately affected Sub-Saharan Africa. Canada has accepted refugees living with HIV for permanent resettlement since 2002. The additional burden of HIV on individuals already experiencing stressful transitions requires dedicated support for newcomers, however government immigration policies are falling short. Furthermore, existing services for people living with HIV in Canada may not be suitable for newly arrived refugees. This qualitative study examines the degree to which settlement services are prepared to provide support to HIV-positive African refugees.

METHODS: In 2006, 15 qualitative interviews were completed with professionals, purposively chosen because of their job roles and their responsibilities, working with African refugees. They included 7 settlement workers, 3 HIV case managers, 2 nurses, 1 outreach worker, 1 doctor and 1 pharmacist. The first author conducted all interviews, which were tape-recorded and transcribed verbatim. Themes were recorded and coded using Microsoft Excel. The questions covered accessibility, barriers and the role of community based agencies. The interviews were exploratory in nature and took between 55 minutes and 2 ½ hours. The Simon Fraser University Ethics Review Board approved the study and participants signed a consent form prior to being interviewed. Results are anonymous, displaying only the person's job title.

RESULTS: Issues generally problematic to refugees, including the complexities of services and language barriers, were identified. Issues unique to refugees living with HIV include finding a physician, transportation to see HIV specialists, cultural competency issues, language limitations, and stigma and discrimination within the African refugee community. Furthermore, communication between the services provided by each level of government is problematic as they are lacking procedural guidelines regarding disclosure of HIV status.

CONCLUSIONS: The findings strengthen the claim that refugee settlement services need to be reformed. Interventions focusing on language barriers, cultural competency, access to culturally appropriate HIV services, and reducing stigma and discrimination within African refugee communities should be implemented. Results suggest that settlement workers are not prepared to adequately support HIV-positive refugees given current government procedural shortcomings.

O078
ARTS AND PREVENTION BEST COMBINATION: EMPOWERING THE LATIN COMMUNITY THROUGH ART AS A POWERFUL PREVENTION TOOL FOR DEALING WITH SOCIAL VULNERABILITIES AND POWER IMBALANCES PRESENTED INTO ISSUES OF HIV PREVENTION

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The HIV/AIDS Prevention Program of the CSSP created a pilot volunteer based initiative in which regular arts workshops are offered to the community out of the HIV/AIDS Prevention offices. This project is entitled "Latino Pride Arts and Empowerment" (LPACE). Workshops include Make Up and Beauty Pageants for Transsexuals/Transgendered, Photography, Poetry and Free Writing, Painting and Drawing. The workshops are facilitated by volunteers who have received CSSPs 8 week MSM HIV/AIDS Peer Educator Training Course. Through relevant and exciting arts activities, the volunteer facilitators will facilitate public discussion on topics related to HIV Prevention, condom negotiation and sexual risk situations.

Power imbalances in intimate relationships and other factors which lead to personal vulnerability are addressed through various artistic media. This creates the ground for public discussion and debate on topics and issues which affect sexual decision-making such as: social barriers, isolation, poverty, disability, racism, unemployment and discrimination.

LPACE works to deconstruct the economic, social, political, geographic, physical and psychological factors which constitute HIV risk and shape personal decision-making on sexual activity. The goal of the project is to allow participants and the wider community to articulate risk factors, link risk factors to power imbalances and develop strategies for making informed and conscious decisions to reduce personal risk. The project will highlight through creative means, various strategies for personal and collective empowerment in the face of discrimination and poverty.

At the end of the LPACE workshops, an exhibition open to the general public will take place demonstrating the wide range of works created by the project. At the exhibition, a conversation will be facilitated with artists and community members in which the issues surrounding HIV/AIDS Prevention and Support within the Latino LGBTQI community will be further discussed and recognized so that collective and collaborative creative responses can be sustained.

O079
ABORIGINAL YOUTH LEADERSHIP IN HIV PREVENTION: AN EXAMINATION OF ARTS-BASED HEALTH PROMOTION

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DESCRIPTION OF PROJECT: "Taking Action: Using Arts-Based Approaches to Develop Aboriginal Youth Leadership in HIV Prevention" is a community-based research project examining how Aboriginal youth understand the links between individual HIV risk and structural inequalities (such as colonialism, poverty and access to health care). The study offers key findings relevant to health promotion through engagement of Aboriginal youth in the production of artistic pieces that represent their understandings of HIV in the context of structural inequity and inequality.

METHODS: A participatory action research design using arts-based approaches (e.g. photography, theatre, painting, and hip hop, etc.) in two Canadian Aboriginal communities – one in an urban context and one in a rural context – will have taken place to unpack the links between HIV and colonialism. Data were collected through the creation of artistic cultural productions during weekend-long workshops, intake surveys and in-depth follow-up interviews. Analyses have been conducted collaboratively. In October 2008, the first workshop was held in Toronto with urban Aboriginal youth (aged 13-17; n=8). In February 2009, the second workshop will be held at the Kettle and Stony Point First Nation, reaching youth from both the Aamjiwnaang First Nation and the Kettle and Stony Point First Nation.

FINDINGS: Our findings support the notion that arts-based approaches to the development of HIV prevention knowledge and Aboriginal youth leadership are applicable to the field of health promotion. As an innovative tool that involves youth "where they are at," it embeds cultural understandings of health in by youth-for-youth prevention efforts. We also see that these approaches have potential to contribute to grass-roots advocacy, promoting youth voice in policy-making. Arts-based approaches represent one way to assist with decolonizing the research process, moving forward the agenda of ownership, control, access and possession (OCAP).

O080
SEXUAL VIOLENCE, HIV/AIDS AND ABORIGINAL WOMEN: HOW ABORIGINAL WOMEN UNDERSTAND HEALTH AND HEALING

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OBJECTIVE: To gain a better understanding of how HIV-Positive Aboriginal women who have experienced sexual violence understand health and healing and to identify policy recommendations to improve the quality of services they receive.

PROCESS: This study has been derived from preliminary data collected for a broader project currently being conducted by the Canadian Aboriginal AIDS Network titled: Sexual Violence, HIV/AIDS and Aboriginal Women. It is a Community-based, qualitative study employing semi-structured, in-depth interviews with HIV-Positive Aboriginal women. Female field researchers were employed to conduct interviews with participants in four Canadian cities. Participants were asked to discuss their lived experiences with sexual violence and HIV/AIDS, their coping strategies, the quality of services they receive and their recommendations for improvements in the provision of culturally sensitive services. Following the interview, participants were provided with referrals for western style counselling and traditional healing practices.

RESULTS: A total of 16 interviews were conducted, ranging from 10 minutes to 2 hours in length. When asked about which health services they found helpful participants identified church, Aboriginal health centres, women's groups, sweat lodges and gatherings, smudging, western and traditional medicines and counselling as important in coping with sexual trauma and living a healthy lifestyle. When asked about which services they found were not helpful, some participants described experiences of discrimination in the healthcare system where cultural practices, such as the use of traditional medicines, were not respected.

CONCLUSIONS: Many Aboriginal women hold a holistic vision of health and healing and this understanding is rooted in the cultural tradition of the medicine wheal which encompasses a spiritual, physical, mental and emotional self. There is a need for service providers to understand and honour Aboriginal culture as an important component for Aboriginal women in healing from both sexual trauma and living a healthy life with HIV/AIDS.

Women & Children

O081
INCREASED PROTECTION AGAINST GLOBALLY AND CLINICALLY RELEVANT WILD TYPE AND DRUG RESISTANT HIV-1 INFECTION IN VITRO WITH THE CANDIDATE MICROBICIDE COMPOUNDS, DAPIVIRINE AND TENOFOVIR, IN COMBINATION

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BACKGROUND: Microbicides are intended to prevent the sexual transmission of HIV. Given the extraordinary capacity of HIV to adapt under selective pressure coupled with the rising incidence of drug resistant (DR) HIV transmission on a global scale, microbicides must be active against a broad spectrum of HIV variants. Thus, efficacious formulations will likely be comprised of inhibitor combinations. Moreover, favourable combination effects may decrease the toxicity of microbicides.

The candidate microbicide compounds, Dapivirine (a non-nucleoside reverse transcriptase (RT) inhibitor (NNRTI)) and Tenofovir (a nucleoside RT inhibitor, (NRTI)), inhibit HIV-1 RT via distinct mechanisms. The likelihood that this combination is synergistic against genetic

variants of HIV-1 is good since NRTIs and NNRTIs have been shown to act synergistically previously.
OBJECTIVE: Dapivirine and Tenofovir were tested alone and in combination against wild type (WT) and DR HIV-1 from globally prevalent subtypes to investigate the fidelity of the combination effect in the context of HIV-1 variability.
METHODS: HIV-1 replication in PBMCs was evaluated by p24 quantification and RT activity, whilst infectivity was verified by counting light units emitted from exposed TZM-bl cells. WT and DR HIV-1 genetic clones were used to control for viral variation. The combined effects were determined by calculating combination indices (CIs). Mechanisms underpinning any effect observed in tissue culture were clarified by molecular based approaches using purified WT and DR recombinant RT (rRT).
RESULTS AND CONCLUSIONS: The compounds tested exhibited better protection against WT and DR HIV in combination: Dapivirine with Tenofovir showed enhanced activity against infection with WT and DR HIV-1 genetic clones from subtypes B, C and CRFO_AG, (CI= 0.6-1.0). Purified rRT assays revealed this enhancement may result from the decreased pyrophosphate mediated excision of nucleotide incorporation during reverse transcription. Of note, this combination appears to be equally or more potent against variants harboring the RT mutation Y181C when compared to the WT variant. This is of particular relevance given that Y181C HIV-1 variants have been reported to be sexually transmitted with similar efficiency as WT.

O082
THE EFFECT OF HLA-G IN PERINATAL MOTHER-CHILD HIV-1 TRANSMISSION

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OBJECTIVES: Previous studies showed that mother-child HLA class I concordance is associated with an increased risk of perinatal HIV-1 transmission. HLA-G is a non-classical Class I HLA gene that is expressed at high levels in mother-fetal trophoblast cells and may play an important role in mother to child HIV-1 transmission. This study was conducted to study the role of HLA-G in perinatal HIV-1 transmission.
DESIGN: More than 200 HIV positive mothers and their children from a mother to child HIV-1 transmission (MCH) cohort established in Nairobi, Kenya in 1986 were genotyped for HLA-G using a sequence-based method. Exons 2 and 3 of HLA-G were amplified by PCR, followed by purification and sequencing. Genotyping of HLA-G was completed using CodonExpress. Statistical analysis was carried out using SPSS 15.0.
RESULTS: A total of 136 mothers and 92 of their children have been fully genotyped for HLA-G. 8 HLA-G alleles were identified in the mothers, and 9 alleles identified in the children. Several potential novel HLA-G alleles were also identified and will be confirmed by cloning and sequencing. HLA-G*01010101 was the most frequent allele in both mothers and the children at 44.12% and 37.5% respectively, followed by HLA-G*01010201 (26.1% and 25%), HLA-G*010401/04 (11.76% and 18.48%) and HLA-G*0103 (9.93% and 6.52%). Preliminary analysis showed that mothers with at least one copy of HLA-G*0103 have a significantly decreased chance of transmitting the virus to their children (p = .027, odds ratio: 0.334 95%CI: 0.124-.902).
CONCLUSIONS: Preliminary analysis has showed that HLA-G is more diverse in this East African population and may play an important role in the perinatal HIV transmission. Currently we are completing HLA-G genotyping of this mother-child population and which may provide further insight on the role of HLA-G in perinatal HIV-1 transmission.

O083
IMMUNOGENICITY OF THE 7-VALENT CONJUGATE PNEUMOCOCCAL VACCINE IN HIV-INFECTED CHILDREN BEYOND EARLY INFANCY

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OBJECTIVE: *Streptococcus pneumoniae* is the most common cause of invasive bacterial infection in HIV-infected children. There are limited data regarding the immunogenicity of the protein-polysaccharide conjugate pneumococcal vaccine (Prevnar™) in HIV-infected children who receive the vaccine beyond early infancy. We conducted a cross-sectional retrospective study to investigate the immunogenicity of this vaccine in HIV-infected children.
METHODS: All HIV-infected children attending The SickKids HIV Clinic who received Prevnar after the age of 12 months and consented to participate were included. Stored specimens were used to determine the change in antibody concentration to vaccine serotypes (4, 6B, 9V, 14, 18C, 19F, 23F) 2 months and 1 year after completion of the recommended schedule.
RESULTS: Twenty-one subjects (57% female) with a median age of 4 years (range 1.3-10) were included; 5 were < 24 months of age. All were in immunologic category 1 or 2. Median CD4 count was 1087 cells/uL (range 453-3949). Eight antiretroviral naïve subjects had a median viral load of 7009 copies/mL (range 2832 - 25291). Three of 13 subjects on HAART had detectable viral loads (52, 55, and 1306 copies/mL). Four-fold increases in antibody concentration to serotypes 4, 6B, 9V, 14, 18C, 19F and 23F were seen in 57%, 19%, 43%, 52%, 57%, 14%, and 38% of subjects at approximately 2 months post-vaccination, and in 60%, 40%, 40%, 60%, 35%, 15%, and 40% at approximately 1 year post-vaccination, respectively. There was a higher rate of four-fold increases in antibody concentration in children <2 years (who received the recommended 2 doses of Prevnar) for all serotypes. No subject developed invasive pneumococcal infection.
CONCLUSIONS: Our results suggest relatively poor immunogenicity of Prevnar when administered according to the recommended schedule in infants 12 months of age or older. The need for booster doses of Prevnar or Pneumovax should be studied in this population.

O084
PLACENTAL TELOMERE LENGTH IN HIV INFECTED HAART TREATED PREGNANCIES

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BACKGROUND: Zidovudine (ZDV) crosses the placenta and may potentially inhibit telomerase, the enzyme which replicates telomeric DNA. Although telomerase activity is absent in somatic tissues, it is detected in highly proliferating tissues such as embryonic, placental, and hematopoietic cells. We investigated whether placentae from HAART-treated pregnancies contained shorter telomeres than tissues from uninfected controls.
METHOD: Placental tissue from the maternal and fetal side were collected from 45 HIV-infected women treated with HAART from the second trimester (N=34) or throughout pregnancy (N=11), and 37 HIV-uninfected controls. Lymphocyte average telomere length (ATL) was determined for a subset (N=25) of fresh cord blood samples by flow cytometry fluorescence in situ hybridization and shown to correlate with relative ATL (rATL) measured by quantitative PCR (qPCR) on the corresponding whole cord blood DNA (N=25, R=0.91, p <0.0001). qPCR was then used to determine rATL of frozen placental samples. Mann-Whitney and paired sign test were used to compare groups. Pearson's correlation was used to explore the relationship between fetal and maternal rATL, CB rATL, maternal age or gestational age at delivery.
RESULTS: Placentae rATL spanned a wide range and were correlated to those of corresponding cord blood (N=25, R≥0.8, p <0.0001). In HAART-exposed samples, placenta maternal and fetal side rATL were more weakly correlated (N=45, R=0.68) than in controls (N=37, R=0.82) and their slopes were different (0.57 vs. 0.81, t=18.91, p <0.0001). However, placenta rATL did not significantly differ between HAART-exposed and controls, either on the fetal (7.1±1.3 vs. 7.3±1.7, p=0.61) or maternal (6.9±1.6 vs. 7.2±1.7, p=0.38) side. There was also no relationship between placental rATL and maternal age or gestational age.
CONCLUSIONS: Frozen placenta samples' rATL were analyzed by qPCR. In this small study, there was no statistical difference between telomere lengths in HAART-exposed compared to control placentae and other factors that may influence telomere length are being investigated. Imbalance between the maternal and fetal side of the placenta may suggest a differential effect.

O085
HIGH UPTAKE OF HIV TESTING AMONG PREGNANT WOMEN IN ONTARIO

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OBJECTIVE: In 1994, the ACTG 076 trial reported that antiretroviral prophylaxis reduced mother-infant HIV transmission by 70%. In the years following, few pregnant women in Ontario were tested for HIV. In 1999, Ontario introduced a policy to offer HIV screening to all pregnant women and measures were undertaken to promote this policy. In 2001, we began sending a reminder memo to prenatal care providers who had not ordered an HIV test. To evaluate the program, we examined patterns of HIV testing among pregnant women in Ontario.
METHODS: In Ontario, prenatal screening for infectious markers including HIV is carried out at the Public Health Laboratory and data is managed centrally. We determined the number of pregnancies with any test prescribed and the proportion with an HIV test.
RESULTS: From January 1999 to September 2008, 1,434,330 pregnancies (~2,800/week) were tested for an infectious marker and included in the analysis. The proportion of pregnancies tested for HIV during the pregnancy increased from 33.3% in the first quarter of 1999 to 93.3% in the third quarter of 2008. 356 pregnant women tested HIV-positive (0.31 per 1,000), 233 for the first time during the pregnancy. In the latest quarter, HIV test uptake women varied little by health region (range 91.9%-94.6%) but more by public health unit (range 86.2%-97.9%). Thirty-two of the 36 public health units achieved an HIV test uptake of 90% or greater, compared to only five public health units three years earlier.
CONCLUSIONS: Uptake of HIV testing in pregnant women in Ontario improved dramatically with the implementation of the new screening policy. Actual HIV test uptake was slightly higher (by ~2%) due to our inability to link to non-nominal tests in the diagnostic database. The reminder memo sent to physicians who had not prescribed an HIV test beginning in 2001 had considerable impact and HIV test uptake in Ontario is now among the highest in the world. Since the screening policy was initiated, about 60 infant HIV infections have been prevented.

O086
AVOIDING HIV INFECTION AMONG STREET-ENTRENCHED WOMEN WHO ARE ENGAGED IN SEX WORK

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OBJECTIVES: Women who engage in sex work and use illicit drugs are at "high risk" for HIV infection and are a major focus of harm reduction interventions. As part of a prospective cohort study designed to describe sexual practices and drug use patterns among a group of street-based sex workers in Vancouver we measured HIV incidence.
METHODS: 237 women were recruited through community advertisements and peer outreach along sex work strolls. A comprehensive survey was administered that captured demographic information, sexual practices, drug use patterns, mobility and the uptake of harm reduction services. Rapid testing for HIV was performed on all HIV negative women at 6-month intervals.
RESULTS: The median age was 37 years (IQR: 21-43years) and median age of sex work initiation was 16 years (IQR: 13-21years). The majority of women (75%) were of Aboriginal ancestry. Forty percent reported working for a pimp or dealer and 39% used illicit drugs with clients. Among baseline drug use patterns, 89% reported crack cocaine smoking, 43% cocaine injection, 37% heroin injection, 21% crystal methamphetamine injection. Among the 183 HIV negative women (77% of those tested), 126 completed at least one follow-up visit and 49 have been followed for 18 months at the time of analysis. There have been no new HIV infections found after 161.33 person-years of follow-up.
CONCLUSION: The abhorrent social conditions, high rates of injection drug use and high numbers of concurrent sexual partners would predict high risk for HIV exposure. However, many women in this community who are HIV negative have found ways to avoid HIV infection that is not captured by traditional risk factor measurements. The protective impact of harm reduction strategies along with less recognized ways of HIV avoidance is at least partially responsible.

O087
CORRELATES OF HIV STIGMA IN HIV-POSITIVE WOMEN IN ONTARIO

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PURPOSE: We examined the predictors of HIV stigma in HIV-positive women currently living in Ontario, Canada. Based on previous literature, we predicted that variables associated with social marginalization (e.g. ethnicity, income, education), medical variables (e.g. higher CD4 count, lower viral load), and increased psychological distress would be indicative of higher perceived HIV stigma among HIV-positive women.
METHODS: 159 HIV-positive women between the ages of 18 and 52 in Ontario completed self-report measures of the aforementioned variables. Women were recruited through 28 AIDS Service Organizations, 8 HIV clinics, and 3 Community Health Centres.
RESULTS: In multiple regression analyses, for women born in Canada, lower educational level and higher anxiety were associated with higher HIV stigma. For women born outside of Canada, having been judged by a physician in Canada for trying to become pregnant and higher anxiety were associated with higher HIV stigma.
CONCLUSIONS: For HIV-positive women born in Canada, psychological distress and education should be addressed to reduce perceived HIV stigma. For HIV-positive women born outside of Canada, negative judgment by a physician regarding intentions to become pregnant and psychological distress need to be addressed to reduce perceived HIV stigma for this population. Health care providers should be trained in the provision of sensitive and effective health care for women living with HIV, especially when providing reproductive health care.

O088
PATIENT COMPREHENSION OF ANTIRETROVIRAL DRUG RESISTANCE

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BACKGROUND: A patient's understanding and use of healthcare information can affect their decisions regarding treatment. Better patient understanding about HIV resistance may improve adherence to highly active antiretroviral therapy and therefore decrease population viral load and extend the use of first-line HIV therapies. Our objective is to examine knowledge of developing HIV resistance and explore treatment outcomes in a cohort of HIV+ persons on HAART.
METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ persons on HAART. Explanatory variables are collected through an interviewer-administered survey and clinical variables are collected through a linkage with the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Categorical variables were compared using Fisher's Exact Test and continuous variables using the Wilcoxon Rank-Sum Test. Logistic regression was performed for the unadjusted bivariate and the adjusted multivariate analysis.
RESULTS: Of 457 LISA participants, less than 4% completely defined HIV resistance and 20% reported that they had not discussed resistance with their physician. Overall, 45% of the cohort is ≥95% adherent based on prescription refills. Owing to small numbers, correct and partially correct answers were pooled for analysis. The model showed that being younger [OR =0.97,95%CI(0.95-0.99)], having greater than high school education [OR=1.64,95%CI(1.07-2.51)], discussing medication with physicians [OR=3.67,95%CI(1.76-7.64)], having high provider trust [OR=1.02,95%CI(1.01-1.03)] and receiving one-to-one counseling by a pharmacist [OR=2.14,95%CI(1.41-3.24)] are predictive of a complete or partial definition of HIV resistance. The probability of completely defining HIV resistance increased from 15.8% to 63.9% if respondents had discussed HIV medication with both a physician and a pharmacist.
CONCLUSION: Although understanding of HIV resistance showed no differences in treatment outcomes in this cohort, overall adherence and complete understanding of HIV resistance was low. If patient understanding could be improved through discussions with physicians and pharmacists, we may have the potential to enhance overall adherence and treatment outcomes.

Surveillance, Monitoring and Evaluation, Mathematical Modelling

O089
MAPPING CHANGING DYNAMICS AND PREVENTION NEEDS OF PUBLIC SEX WORK SPACES: A PILOT PROJECT

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OBJECTIVES: Despite high rates of violence, HIV infection, and mortality among street-based sex workers, little is known about the geographic boundaries and changing dynamics of street-based sex work. This study piloted mapping of public sex work spaces to assess the prevention needs and environmental-structural factors shaping access to services among street-based female sex workers (FSWs) in Vancouver.
METHODS: Through a community-based research partnership between a sex work cooperative (SWUAV), a service organization (WISH), and academic researchers (BCCfE), we mapped sex work spaces during regular nightly mobile outreach over four months (three nights per week; three hours per night). Data were recorded by peers (current/former FSWs) on the number and locations of FSWs contacted and observed nightly and resources provided (e.g. clean syringes, condoms, 'red light alert' sheets on client violence). Trends in volume and characteristics of sex work strolls were assessed, and descriptive analysis was supplemented by geographic information system (GIS) analysis.
RESULTS: Over a four-month period, 870 observations of FSWs on sex work strolls were made, with an average of 22 different FSWs observed per night (range: 5-52). 44% of women were of Aboriginal ancestry, with 44% young adults (25-35years) and 30% less than 25 years of age. Bi-monthly peaks in volume of FSWs were observed that coincide with economic resource acquisition (e.g. welfare) of both FSWs and clients. Significant heterogeneity in public sex work spaces were observed, with differences in demographics and volume of FSWs by geographic location of working areas. Over a third (38%) of FSWs requested condoms, while 11% requested 'red light alerts'.
DISCUSSION: The mapping of sex work spaces, within mobile outreach service delivery, demonstrates the importance of elucidating the geographic dimensions of public-place-based sex work in designing effective prevention programming with and for FSWs. Results will be used to develop targeted prevention service delivery models.

O090
HIV AND HCV INFECTION AMONG IDUS IN THE SURVUDI NETWORK – 1995 TO 2008

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OBJECTIVES: To estimate HIV and HCV prevalence among injection drug users (IDUs) in the SurvUDI network and to examine trends in HIV and HCV incidence and use of syringes previously used by someone else ("used syringes").
METHODS: Since 1995, active IDUs [having injected recently (past 6 months)] are recruited in harm reduction and health programs across the province of Quebec and the city of Ottawa. Participants provide informed consent, complete an interviewer-administered questionnaire and give saliva samples for antibody testing (anti-HIV: since 1995; anti-HCV: retrospectively for 1997-2003 and prospectively since). Through a unique identifier, multiple visits by a same IDU (repeater) are linked and incidence measured. The bootstrap method was used for trend analyses.
RESULTS: As of June 30, 2008, 11 240 IDUs had completed 19 911 interviews. Overall, 73.6% were males with a median age of 34 years (females: 28 years). At baseline, 87.1% had recently injected cocaine and 47.4% had recently injected opiates. Recent use of "used syringes" decreased significantly from 43.4% of participants in 1995 to 25.4% in 2007 (p <0.001). HIV prevalence (1995-2008) and incidence (1995-2008) were 14.3% [95% CI: 13.7-15.0%] and 2.9 per 100 person-years [2.5-3.2 per 100PY; 265 seroconversions among 2767 repeaters initially HIV-negative]. HCV prevalence (2003 to 2008) and incidence (1997 to 2008) were 62.8% [61.3-64.4%] and 27.0 per 100PY [24.3-29.7 per 100PY; 383 seroconversions among 862 repeaters initially HCV-negative]. Co-infection rate was 13.0% (2003 to 2008). From 1995 to 2006, HIV incidence significantly decreased (p <0.001) while from 1997 to 2006 HCV incidence remained stable (p=0.427).
CONCLUSIONS: The observed HIV incidence is unacceptably high. However, its decreasing trend offers hope and will have to be followed closely. The high and non decreasing HCV incidence requires special attention. Existing harm reduction programs must be strengthened and new approaches developed to curb both epidemics among IDUs.

O091
HIV INCIDENCE DENSITY AMONG REPEAT TESTERS IN BRITISH COLUMBIA

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BACKGROUND: HIV incidence is important to estimate because it provides insight into trends of the HIV epidemic and the potential impact of community-wide treatment and prevention efforts.
OBJECTIVE: To examine trends in HIV incidence density among repeat testers in British Columbia.
METHODS: Using a comprehensive provincial laboratory testing database, persons who tested for HIV between 1989 and 2006 at least twice, with their first test being negative, were eligible for this analysis. The database captures approximately 95% of all HIV tests in BC. Incidence density was calculated using a similar approach to Kitayaporn et al, AIDS 1994. Confidence intervals were calculated using exact methods.
RESULTS: During our study period 376,255 individuals were included in our analysis with 3,325 subsequently seroconverting (19% all new HIV diagnoses during this period). The total number of person-years among eligible participants was 1,487,398 person-years yielding an overall incident density of 0.22 (95%CI: 0.22 – 0.23) per 100 person-years. Incident cases of HIV among repeat testers declined over time. In the past decade, HIV incidence density was 0.31 (95% CI: 0.28 – 0.35) per 100 person-years in 1995 and has dropped nearly four-fold to 0.08 (95% CI: 0.06 – 0.11) per 100 person-years in 2005. HIV incidence density was consistently and significantly higher for males than females (p < 0.001).
CONCLUSION: This study demonstrates the value of utilizing a centralized laboratory database testing for HIV to calculate incidence density among repeat testers. However, it does not offer insight on incidence among individuals who have never tested or who have not repeatedly tested for HIV. Using this methodology, we showed that HIV incidence density among repeat testers decreased over time in BC. Corroboration of these findings by alternate methods (e.g., STARHS-based or modeling methods) and incidence estimation among high prevalence populations such as MSM or IDU is required.

O092
PHYLOGENETIC ANALYSIS OF POPULATION BASED HIV DRUG SURVEILLANCE DATA MAY IDENTIFY EPIDEMIC DRIVERS

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BACKGROUND: Sequencing of the HIV pol gene, for drug resistance testing, has generated an abundance of HIV genetic sequences that may have additional public health value. Phylogenetic analyses of cohorts have been used for the identification of groups where transmission is ongoing. We propose a systematic phylodynamic approach that for little cost can be used at population surveillance level, to provide new information on patterns of HIV transmission.
METHODS: Between 2002 and 2005, 876 serum specimens from first time HIV positive patients in British Columbia were collected and 1240bp pol sequences were generated. Phylogenetic analysis (K2P-NJ) on the 300 sequences from 2002, was used to systematically identify related infections (within group distance GD <0.031 and bootstrap values >80%). The entire 2002-2005 dataset was then reanalysed to evaluate cluster growth rate originating from the 2002 clustered and non-clustered sequences. Recent infections were identified using the STAHRS algorithm.
RESULTS: Among the 2002 infections, 136 sequences sorted into 52 clusters ranging in size from 2 to 9 members. Aboriginal ethnicity and

intravenous drug use correlated and were associated with cluster membership in 2002. Cluster growth, 2002-2005, correlated with the original cluster size; however, the greatest growth was seen arising from sequences that were initially non-clustered. These high growth clusters were seeded from sequences that were much more likely to be recent infections.
CONCLUSIONS: This population level phylodynamic analysis suggests that recently infected individuals are responsible for a disproportionate number of HIV transmissions. The association of high cluster growth with early infections suggests that some clustering patterns may be a marker for recent infections. This powerful, additional information can be produced, with little additional cost, from pre-existing sequences and epidemiologic data held within public health databases.

O093
PATTERNS OF HIV TESTING AMONG ONTARIO PHYSICIANS

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BACKGROUND: HIV testing is important for HIV prevention and control as well as benefiting the person tested. Nevertheless, approximately 35% of HIV infections in Ontario remain undiagnosed. We examined patterns of HIV testing among Ontario physicians to determine provider-related factors associated with HIV testing.
METHODS: Physicians were identified from HIV test requisitions received at the Ontario Public Health Laboratory from January 1 to December 31, 2006 and were linked to a database of Ontario physicians using probabilistic matching. We examined HIV testing frequency by demographic characteristics and physician specialty. In multivariate logistic regression models, we assessed predictors of prescribing at least one HIV test and predictors of high (100+) testing frequency.
RESULTS: 12,477 physicians (59.3% of Ontario physicians) prescribed at least one HIV test in 2006 (mean 20.0, median 10 tests per physician); the proportion was highest among physicians in Central East, other (72.4%) and Northern (69.4%) compared to other regions (53.7-58.7%), p <0.0001, and higher among more recent graduates. In multivariate analyses adjusted for health region and graduation year, HIV testing was associated with specialty: family medicine/general practice (aOR 11.19), obstetrics/gynecology (aOR 10.71) and internal medicine (aOR 2.07); these specialties prescribed 89.1% of the 361,609 HIV tests. The proportion of physicians by testing frequency was: 1-4, 35.5%; 5-19, 32.0%; 20-99, 38.4%; 100-999, 3.9%; 1,000+, 0.23%. Predictors of high testing frequency were male sex (aOR 1.4 [95%CI: 1.1, 1.6], practice in Toronto (aOR 2.9 [95%CI: 2.5, 3.5]), and specialty in obstetrics/gynecology (aOR 5.6 [95%CI: 3.8, 8.2]) or family medicine/general practice (aOR 2.4 [95%CI: 1.8, 3.2]). 0.29% (1,048) tests were HIV-positive, higher among physicians with low (1-4) and high (1,000+) testing frequency (0.53% and 0.66%, respectively). 436 physicians (3.5%) had at least one HIV-positive result.
CONCLUSION: HIV testing by Ontario physicians varied substantially by health region, graduation year and specialty. Although unable to account for patient-related factors, our study provides valuable data to inform HIV testing policy and continuing medical education.

O094
HIV RISK PROFILES AMONG MSM-IDU AND MFSP-IDU: RESULTS FROM A NATIONAL ENHANCED HIV SURVEILLANCE SYSTEM

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OBJECTIVES: To explore whether HIV risk profiles differ between males reporting male sexual partners (MSM) and those reporting only female sexual partners (MFSP) in a sample of people who inject drugs (IDU).
METHODS: I-Track is an enhanced surveillance system that tracks HIV and associated risk behaviours among IDU in Canada. Through face-to-face interviews (Phase 1, 2003-2005, seven sentinel sites), information was collected on demographics, injecting, sexual and HIV testing behaviours. A blood/saliva sample was collected for HIV testing. For analyses, male participants with a sexual partner in the past 6 months were divided into those who reported having a male sex partner (MSM-IDU) and those who did not (MFSP-IDU). Chi-square tests assessed differences between groups. Only statistically significant findings are presented ($p < 0.05$).
RESULTS: Of 1615 eligible males, 192 (11.9%) were MSM. HIV prevalence was higher among MSM-IDU (25.7% vs. 11.9%).
Compared to MFSP-IDU, a higher proportion of MSM-IDU were ≤30 years of age (41.2% vs. 29.9%) whereas a lower proportion self-reported Aboriginal ethnicity (13.8% vs. 25.7%). With respect to injecting behaviours, a higher proportion of MSM-IDU reported injecting: cocaine most often (76.7% vs. 53.4%); in public (39.6% vs. 27.2%); with needles previously used by someone else (33.2% vs. 15.4%), and with such used needles, from people they didn't know (27.1% vs. 11.0%).
A higher proportion of MSM-IDU reported casual sex partners (66.7% vs. 50.0%), client sex partners (42.7% vs. 2.0%) and inconsistent condom use with casual sex partners during vaginal (57.4 vs. 44.9%) and oral sex (82.3% vs. 70.9%).
CONCLUSIONS: A higher proportion of MSM-IDU were HIV-infected and reported HIV-associated sexual and injecting risk behaviours than MFSP-IDU. Additional research is needed to better understand the determinants of these riskier behaviours to guide the development of policies and programs specific to this particularly high risk group of IDU.

O095
HIV PREVALENCE IN TORONTO'S EAST AFRICAN COMMUNITIES

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OBJECTIVE: To estimate HIV prevalence in Toronto's East African communities.
METHODS: EAST (East African Health Study in Toronto) is the first HIV-related epidemiologic study in Canada of immigrants from African countries (Ethiopia, Kenya, Somalia, Tanzania, and Uganda). From 2004-2006, we conducted interviews with 456 men and women recruited through community venues, organizations, and snowballing. HIV infection was ascertained by HIV antibody testing of saliva specimens and self-reports in face-to-face interviews. Over 75% (347/456) of participants provided a saliva specimen and results were obtained for 72% (327/456). Results are reported as proportions with 95% confidence intervals (CI).
RESULTS: The overall HIV prevalence in EAST was 2.1% (95% CI 0.6-3.7; 7/327). Among women, prevalence was 1.7% (95% CI 0.0-3.6; 3/177) and among men, 2.7% (95% CI 0.06-5.3; 4/150). Further analysis accounting for the non-random, volunteer nature of the sample suggested that underlying prevalence maybe closer to 1.2% (95% CI 0.03-2.4; 4/324). 12 participants self reported they were HIV-positive (five declined to provide saliva, one provided insufficient quantity of saliva, and six were confirmed with laboratory testing). Additionally, one participant self-reported being HIV-negative but tested HIV-positive. Prevalence based on self-reports and saliva testing was 2.9% (95% CI 1.3-4.4; 13/456). Of the 12 people who self-reported as being HIV-positive, 10 thought they had been infected through heterosexual sex, one through blood transfusion, and one either through heterosexual sex or during surgery. Reasons for refusing to provide saliva included: test was unnecessary, already knew HIV status, unhappy with saliva collection, wanted results of test, and confidentiality.
CONCLUSIONS: Past estimates of HIV prevalence in this population have been based on modeling from data on AIDS cases, diagnostic test reports, and estimates from the countries of origin. EAST prevalence estimates are consistent with modeled estimates. EAST provides urgently needed empirical data to characterize disease burden among East Africans living in Canada.

O096
POURQUOI LES PERSONNES À HAUT RISQUE DE CONTRACTER LE VIH NE SE FONT PAS DÉPISTER RÉGULIÈREMENT ?

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Le tiers des personnes infectées par le VIH ne le savent pas et 41% des PVVIH se font diagnostiquer tardivement.

OBJECTIF : Décrire les habitudes de dépistage chez une population à haut risque et élucider les raisons pour lesquelles les individus ne se font pas dépister régulièrement.
MÉTHODE : Analyse des résultats d'une campagne de dépistage auprès d'une clientèle à haut risque, conduite à la clinique l'Actuel, depuis octobre 2008. Les participants étaient recrutés à la clinique même ou s'y rendaient à cause de la publicité de la campagne « Fais-toi tester » placée dans le village gay de Montréal.
RÉSULTAT : Entre octobre et décembre 2008, 856 individus ont été dépistés dans le cadre de la campagne « Fais-toi tester » à la Clinique l'Actuel. 99% étaient des hommes, avec en moyenne 34 ans (IQR=26-42). 12,6% n'avaient jamais été testé auparavant et le dernier dépistage remontait à ≥2 ans chez 46% des cas. 35% des individus ne se faisaient pas dépister plus souvent parce qu'ils ne se sentaient pas à risque, 32% parce qu'engagé dans une relation exclusive, 24% par négligence, 17% par peur de recevoir un résultat positif, 11% parce qu'ils ne savaient pas où aller, 6% à cause du délais de réponse trop long et 1% pour des raisons légales. 59% des participants étaient venus se faire dépister à cause de la campagne : 88% à cause de la gratuité du test et 65% parce qu'il s'agissait d'un test rapide. Dix-huit cas (2,1%) se sont avérés positifs. Tous les séropositifs avaient déjà été testés auparavant (61% au cours de la dernière année). 86% sont venus dans le cadre de la campagne parce que le test offert était un test rapide.
CONCLUSION : Offrir un test de dépistage rapide et gratuit pourrait grandement contribuer à une meilleur surveillance de l'infection au VIH.

Coinfections and Vulnerable Populations

O097
COCAINE AND CRACK USE AND RESULTING LIFESTYLE INSTABILITY ARE LINKED TO A REDUCED ACCESS TO HEPATITIS C (HCV) TREATMENTS

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BACKGROUND: HIV-HCV co-infected persons have low rates of HCV treatment. We sought to determine what factors are associated with failure to receive HCV treatment.
METHODS: HCV-HIV co-infected patients were enrolled prospectively from 2003-2008 from 13 centres across Canada. Participants completed questionnaires on demographic, social, drug use and clinical care. Of 512 individuals enrolled; 38 had spontaneously cleared HCV and were excluded, leaving 474 for analysis. Multivariate logistic regression models were used to determine which exposures were associated with never having received HCV treatment.
RESULTS: 82 patients (17%) received HCV treatment prior to cohort entry, 47(10%) initiated treatment after cohort entry and 345 (73%) were never treated. Participants who received HCV treatment prior to cohort entry did not differ from those who initiated HCV treatment after entry thus both groups were pooled for the analysis. Characteristics that did not differ according to receipt of HCV treatment were: age, gender, living quarters, alcohol intake, past psychiatric institutionalization and duration of HCV infection. Characteristics associated with a decreased likelihood of HCV treatment were (% in untreated vs. treated; aOR: 95% CI; p-value): monthly income < 1500$ (59% vs. 17%, 2.7, 1.7-4.3, p <0.0001), past incarceration (48% vs. 12%, 2.7: 1.7-4.1; p <0.0001), active IDU (61% vs. 17%, 3.4: 2.2-5,4; p <0.0001), specifically, cocaine injection (28% vs. 5%, 3.0: 1.8-5.0; p <0.0001), crack (12% vs. 1%, 8.1: 2.5-26; p= 0.0005) and having attended drug therapy (45% vs. 12%, 1.9: 1.3-2.9; p= 0.0002). Other drug use (e.g. heroin, ecstasy, benzodiazepines) and methadone treatment were not associated with differences in HCV treatment.
CONCLUSIONS: Activities associated with disadvantaged lifestyle, cocaine and crack use in particular, were predictive of decreased HCV treatment. Drug treatment programs did not improve HCV treatment uptake. Interventions aimed at addressing both lifestyle instability and improvement of addiction treatments are needed to increase HCV treatment rates.

O098
PREDICTORS OF END STAGE LIVER DISEASE (ESLD) IN PATIENTS WITH HIV AND HCV CO-INFECTION

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BACKGROUND: ESLD, a complication of chronic HCV infection, is more common in patients co-infected with HIV. We explored patient characteristics that could be included in a model to predict the likelihood of ESLD in chronically co-infected patients.
METHODS: Data were analyzed from participants in the Canadian HIV-HCV co-infection cohort. Descriptive statistics and multivariate logistic regression models were used to evaluate risk factors associated with developing a first diagnosis of ESLD (defined as: decompensated cirrhosis, hepatic encephalopathy, bleeding esophageal varices, ascites, spontaneous bacterial peritonitis, hepatoma, and liver-related death).
RESULTS: 511 patients were enrolled between 2003-2008, and followed for a median (IQR) of 11 (6-31) months. Fifty-eight patients (11%) already had a diagnosis of ESLD at enrolment and were excluded. At baseline, 80% were male with median age of 43 (39-48) years, 34% were active injecting drug users (IDU). The median duration of HIV and HCV infections was 19 (13-25) years and 74% had acquired HCV through IDU. Fourteen patients (3%) developed first ESLD a median of 12 (6-22) months after enrolment in the cohort (rate 1.98/100PY). Median baseline CD4 was lower at 270 (176-373) vs. 381 (247-531) cells/ml (p=0.03), and serum creatinine (85 vs. 74 umol/L, p=0.03) and proportion with APRI > 1 (62% vs. 29%, p=0.03) were higher, in the patients developing ESLD. In the multivariate analysis, controlling for sex, age, and duration of HCV infection, APRI > 1 (aOR 3.49, 95% CI 1.10-11.06; p=0.03) and CD4 <350 cells/mL (aOR, 3.78, 95% CI: 1.002-14.27; p=0.05) were associated with ESLD.
CONCLUSIONS: Preliminary results suggest that among the hepatic function markers APRI is the most sensitive for predicting ESLD. Futhermore, immunological recovery may play an important protective role against the development ESLD. Subsequent analysis, with a longer follow-up time, will allow us to validate these and other potential predictors of ESLD.

O099
THE INFLUENCE OF BIOLOGICAL SEX ON HIV TREATMENT OUTCOMES IN HIV-HCV CO-INFECTION

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OBJECTIVES: 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 (7)	37 (8)
Mean Baseline CD4 Count [cells/μL (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%
Aboriginal	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/μL 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. Death rate was higher in females compared to males (23% versus 7%, p=0.003).

DISCUSSION: 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.

O100
HCV-INFECTED PATIENTS IN INNER CITY BRITISH COLUMBIA: THE EFFECT OF HIV-CO-INFECTION

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OBJECTIVES: Current and former injection drug users (IDUs) constitute most of the cases of HCV infection in our inner cities. In British Columbia, 20-25% are co-infected with HIV, a fact that may greatly influence their integration into the health care system. We conducted a prospective survey of attendees of four inner city British Columbia clinics to evaluate the prevalence of HIV co-infection and to compare the determinants of HCV treatment appropriateness in the HIV-infected and uninfected subgroups of the population.

METHODS: HCV-infected patients attending inner city clinics in Vancouver, Nanaimo and Victoria were identified for inclusion. HIV infection status was determined, along with characteristics of addiction and appropriateness for consideration of HCV treatment.

RESULTS: A total of 296 patients were included, 56 (19%) were HIV-infected. Compared to the HIV-uninfected sub-group, these were more often First Nations individuals (29% vs. 20%), female (41% vs. 34%), and younger (median 40 vs. 47 years). They were more often in stable housing (45% vs. 34%), engaged in care with an established provider (96% vs. 92%), and in excellent or very good health (20% vs. 9%), less often having mental health problems (27% vs. 39%). They were more likely to have injected recreational drugs in the past 30 days (63% vs. 54%). They were less likely to have received HCV treatment (1% vs. 3%) despite being equally interested in doing so. Only 6% of the HIV-infected individuals were excluded for treatment due to advanced HIV-related immune disease (CD4 count < 300 cells/mm3).

CONCLUSION: About 20% of the HCV-infected patients attending inner city clinics in British Columbia are co-infected with HIV, the vast majority of whom have mild to moderate decreases in CD4 cell counts. Interestingly, they may be in better overall health and exhibit other characteristics making them better candidates to receive treatment for HCV infection, which should be considered more often than it has been in the past in this population.

O101
FIRST NATIONS CANADIANS HAVE REDUCED ACCESS TO HEPATITIS C (HCV) TREATMENT

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OBJECTIVES: To determine whether there is equitable access to HCV treatment amongst different ethnic groups.

METHODS: HCV-HIV co-infected patients were enrolled prospectively from 2003-2008 from 13 centres across Canada. Participants completed questionnaires on demographic, social, drug use and clinical care. Of 512 individuals enrolled; 38 had spontaneously cleared HCV and were excluded, leaving 474 for analysis. Multivariate logistic regression models were used to determine whether ethnicity was associated with ever having received HCV treatment.

RESULTS: 82 patients (17%) received HCV treatment prior to cohort entry, 47 (10%) initiated treatment after cohort entry and 345 (73%) were never treated. Participants who received the HCV treatment prior to cohort entry did not differ from those who initiated HCV treatment after entry thus both were pooled for the analysis. Data about ethnicity was available for 253 individuals, whereas information about geographic origin was available for all 474 individuals. There were 218 (86%) Caucasians, 25 (11%) individuals self-identified as being First Nations and 12 (5%) Blacks. First Nations persons were the only ethnic group with lower rates of HCV treatment (aOR 0.3, CI 0.1, 1.1 p=0.08). First Nations persons were more likely to inject heroin (aOR 9.1 CI 3.5, 24.6; p <0.0001) and to have attended drug therapy (aOR 2.8 CI 1.0, 7.7, p=0.05) but all other factors including use of other drugs and alcohol were comparable to the rest of the cohort. Conversely, only Africans were more likely to receive treatment HCV treatment (38%) aOR 4.7 CI 1.5-14.7 p=0.008.

CONCLUSIONS: People of First Nations were less likely to have received HCV treatment. The reasons for this low uptake of HCV treatment remain unclear, since most determinants are comparable between Caucasians and First Nations' people.

O102
POORER PHYSICAL HEALTH-RELATED QUALITY OF LIFE AMONG ABORIGINALS AND INJECTION DRUG USERS TREATED WITH HAART IN NORTHERN ALBERTA

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INTRODUCTION: Aboriginals appear to experience poorer HAART outcomes compared to non-Aboriginals; however, health-related quality of life (HRQL), an important treatment outcome, has not yet been investigated. We compared the HRQL of Aboriginal vs. non-Aboriginal HIV-patients after they started HAART and investigated whether clinical status might help to explain any observed differences.

METHODS: In 2006-2007, eligible Northern Alberta HIV Program patients who started HAART in 1997-2005 completed the MOS-HIV to measure HRQL. Using two multiple linear regression models for each outcome, we compared physical (PHS) and mental (MHS) health summary scores of Aboriginal IDUs (AB/IDUs), Aboriginals with other exposures (AB/non-IDUs), and non-Aboriginal IDUs (non-AB/IDUs) vs. non-Aboriginals with other exposures (non-AB/non-IDUs). The first model adjusted for socio-demographics (age, sex, and years since starting HAART) and the second additionally adjusted for current clinical status (CD4 cell count and viral load).

RESULTS: Ninety-six patients were eligible (25% female, 35% Aboriginal, 42% IDU). Aboriginals were more likely than non-Aboriginals to be female (p=0.027), to be IDU (p=0.003), to have a viral load >400 copies/mL (p=0.041), and to have a CD4 cell count ≤350 cells/μL (p=0.036). Adjusting for socio-demographics, AB/IDUs (p=0.008), AB/non-IDUs (p=0.002), and non-AB/IDUs (p=0.002) had lower PHS scores than non-AB/non-IDUs. After additionally adjusting for clinical status, these relationships remained significant for AB/non-IDUs (p=0.027) and non-AB/IDUs (p=0.048) but not for AB/IDUs (p=0.12). Adjusting for socio-demographics, AB/IDUs (p=0.075) and non-AB/IDUs (p=0.054) tended to have lower MHS scores than non-AB/non-IDUs, but these associations weakened after adjusting for clinical status.

CONCLUSIONS: Aboriginal ethnicity and IDU were associated with poorer physical HRQL. These associations appear to be partially explained by poorer clinical status, especially for AB/IDUs, which suggests that these observed inequalities in physical HRQL may be diminished by improving patients' clinical status; for example, through improved adherence to HAART.

O103
RATES OF INITIAL VIROLOGICAL SUPPRESSION AND SUBSEQUENT VIROLOGICAL FAILURE AFTER INITIATING HAART: THE IMPACT OF ABORIGINAL ETHNICITY AND INJECTION DRUG USE

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BACKGROUND: Aboriginals are overrepresented in Canada's HIV epidemic; however, little is known about the impact of Aboriginal ethnicity

on clinical outcomes of highly active antiretroviral therapy (HAART). Therefore, we compared rates of initial virological suppression and subsequent virological failure by Aboriginal ethnicity after starting HAART.
METHODS: This was a retrospective cohort study of antiretroviral-naïve HIV-patients starting HAART in January 1999-June 2005 (baseline), followed until December 31, 2005. We compared the odds of achieving initial virological suppression (viral load <500 copies/mL) by Aboriginal ethnicity using logistic regression and, among those achieving suppression, rates of virological failure (the first of two consecutive viral loads >1000 copies/mL) by Aboriginal ethnicity using Cox proportional hazards models. Sex, injection drug use as an HIV-exposure category (IDU), baseline age, CD4 cell count, viral load, calendar year, and HAART regimen were considered as potential confounders and the interaction between Aboriginal ethnicity and IDU was tested.
RESULTS: Of 461 study patients (37% Aboriginal and 48% IDU), 71% achieved initial virological suppression and were followed for 730.4 person-years. Adjusting for sex and baseline CD4 cell count, HAART regimen, and calendar year, compared to non-Aboriginal non-IDUs, the odds of achieving suppression were lower for Aboriginal IDUs (OR=0.33, 95% CI=0.19-0.60, p <0.001), non-Aboriginal IDUs (OR=0.30, 95% CI=0.15-0.60, p <0.001), and Aboriginal non-IDUs (OR=0.38, 95% CI=0.21-0.67, p <0.001). Among patients achieving suppression, Aboriginals experienced higher virological failure rates ≥1 year after suppression (HR=3.35, 95% CI=1.68-6.65, p <0.001), adjusting for sex and baseline viral load and calendar year.
CONCLUSIONS: Aboriginal IDUs, non-Aboriginal IDUs, and Aboriginal non-IDUs were similarly less likely to achieve initial virological suppression compared to non-Aboriginal non-IDUs. Among patients who achieved suppression, Aboriginals experienced virological failure rates over three times higher than non-Aboriginals ≥1 year after suppression. Future research should develop interventions for Aboriginal and IDU HIV-patients aimed at improving outcomes for these vulnerable patients.

O104
HIV-1 VIRAL SUBTYPE AFFECTS CD4+ T-CELL DECLINE AND CLINICAL OUTCOME IN ANTIRETROVIRAL NAÏVE PATIENTS RECEIVING HEALTH CARE IN CANADA

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BACKGROUND: We recently showed that patients infected with non-subtype B HIV (all types combined) who receive universal health care have slower immunological and clinical progression than those infected with subtype B. It remains unclear whether there are differences in disease progression among the various non-B subtypes.
METHODS: We conducted retrospective study of patients followed between 1996-2008 at 3 Canadian university-based HIV clinics. The rate of square root CD4+ T-cell decline in antiretroviral (ARV)-naïve subjects with at least 2 CD4 measurements was calculated using mixed linear regression models adjusted for age, sex, baseline CD4+ T-cell count, HIV RNA and calendar year of cohort entry for the 3 most prevalent clades (B, A/AG and C). Time to first AIDS defining illness from first clinic visit was compared among the groups using adjusted Cox proportional hazards models.
RESULTS: 389 patients were followed for a median of 0.5 years (0.01-9.4). Patients with non-B infections were more likely to be female (50% vs. 15%), were younger (34 vs. 37 yrs) and of African origin (85%) vs. Canadian/European (71%) and Latin America (15%). Results of adjusted analyses are shown in the table below.

Clade	Slopes/p-value	Difference in slope/p-value
B (n=273)	−0.13 (-0.16, −0.11)/0.0001	ref
A/AG (n= 31)	−0.06 (−0.14, 0.02)/0.13	0.07 (−0.005, 0.16)/0.07
C (n= 63)	−0.08 (−0.13, −0.04)/0.0002	0.05 (−0.00034, 0.10)/0.05

Patients infected with clades C tended to be less likely to develop AIDS (11% vs. 16%, aHR = 0.87; 95% CI: 0.36-2.10) compared those infected with clade B.
CONCLUSIONS: Our findings suggest that, for patients receiving universal medical care, HIV viral subtype has a significant impact on immunologic and clinical outcomes. Studies of larger numbers of patients infected with other subtypes are planned to confirm these findings.

Positive Living: Issues of HIV treatment and care

O105
PROCESS OF DISCLOSING SEROLOGICAL STATUS TO PEERS AND ROMANTIC PARTNERS AMONG ADOLESCENTS LIVING WITH HIV SINCE BIRTH

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OBJECTIVE: During adolescence, the parent that was the principal attachment figure during childhood is replaced, in turn, by peers and romantic partners. This study explores, how the efforts to disclose serological status is combined with various adolescent attachment patterns among youth living with HIV since birth.
METHODOLOGY: Within a qualitative chronological (longitudinal) research framework, 18 youth (11 girls and 7 boys aged 13 to 22 years) participated twice in individual semi-directed interviews within a three year interval at the Centre maternel et infantile sur le sida du CHU Sainte-Justine in Montreal.
RESULTS: The fear of being rejected, stigmatised, betrayed and misunderstood are elements that refrain the disclosure process to peers. In the context of romantic relationships, the fear of infecting a romantic partner and being abandoned is added. These reticences remain appreciably the same over time, whereas the strategies established become more precise and refined. The experiences of disclosure are firstly experienced with a significant peer. Then, when the adolescent develops a romantic relationship with a partner and projects him/herself in this relationship, s/he feels an urgency to share his/her reality with the loved one at the risk of losing her/him. Prerequisite conditions were identified by the youth for sharing their infectious status: knowing the other person well, trusting them for significant peers and feeling loved and committed to the relationship for romantic relationships. For those that reported disclosure experiences, concrete means were proposed: knowing the research information to respond to eventual questions or the recourse to resources that can support the process towards disclosure.
CONCLUSION: These results suggest that each serological status disclosure to new attachment figures during adolescence poses new challenges for the adolescent living with HIV. S/he must evaluate if the disclosure conditions are present, consider relevant strategies all while composing with the fears that inhabit him/her.

O106
CASE SERIES OF FERTILITY TREATMENT IN HIV-DISCORDANT COUPLES (MALE POSITIVE, FEMALE NEGATIVE): THE ONTARIO EXPERIENCE

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BACKGROUND: There is an increasing need to evaluate fertility options available for people living with HIV. An estimated 63,000 individuals in Canada live with HIV, the vast majority being of reproductive age. With improved antiretroviral therapy, the resultant prolonged life expectancy and an improved quality of life has made pregnancy planning an important consideration for some people living with HIV.
Sperm washing is an assisted reproductive technology that employs centrifugation techniques to eliminate HIV from the sample. The washed sperm can then be used for intrauterine insemination or in vitro fertilization. This technique has been used in many HIV-discordant couples (male positive, female negative) in Europe and North America with no reported cases of HIV transmission.
We present the results of a study that examines the qualitative experiences and clinical characteristics of HIV-discordant couples (male positive, female negative), who sought sperm washing services in Ontario.
METHODS: Twelve couples consented to participate in a chart review and a semi-structured interview that asked about their experiences with sperm washing and other fertility services in the context of living with HIV.

RESULTS: Key issues that emerged from the study include: access barriers to fertility services (limited clinics that will perform procedures for those living with HIV, cost, travel, time off work, multiple attempts), knowledge of procedures and access to information (sources of information, language, information networks, level of risk), individual and cultural desire to bear one's own children, and stigma around HIV status (degrees of disclosure, stigma around fertility services, fertility service use precipitating questions around HIV, social/familial support).
CONCLUSIONS: Access to sperm washing and fertility services for HIV-discordant couples can be increased by addressing barriers such as limited geographic distribution of clinics, lack of patient and service provider knowledge and resources and inadequate support networks.

O107
FEMMES VIVANT AVEC LE VIH/SIDA ET LIPODYSTROPHIE : ÉTUDE DU PROCESSUS DE TRANSFORMATION CORPORELLE

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De façon générale, les femmes séropositives demeurent sous-représentées en recherche et particulièrement, dans les études quantitatives et qualitatives qui visent l'avancement des connaissances sur la lipodystrophie ou qui tentent de comprendre l'expérience vécue de la lipodystrophie. Alors qu'elles constituent un groupe négligé par rapport à celui des hommes séropositifs, les femmes sont quasi-absentes de la recherche qui porte sur la lipodystrophie et ce, malgré le fait qu'elles subissent une importante transformation corporelle sous l'effet de la thérapie antirétrovirale.
OBJECTIF : Cette étude qualitative avait pour but d'explorer, de d'écrire et de conceptualiser le processus de transformation corporel vécu par un groupe de femmes séropositives qui présentaient des manifestations physiques de la lipodystrophie.
MÉTHODE : La collecte des données s'est déroulée sur une période de 3 mois et a été réalisée par le biais d'entrevues semi-dirigées avec des femmes séropositives (n=19). Les données recueillies dans le cadre des ces rencontres ont ensuite été analysées selon les principes méthodologiques de la théorisation ancrée.
RÉSULTATS : Des cinq catégories identifiées lors de l'analyse, la catégorie centrale intitulée « Transformation corporelle » permet d'explorer l'expérience transitoire vécue par les femmes qui présentent des changements corporels reliés à la lipodystrophie. À l'intérieur de cette catégorie, le processus de transformation corporel est décrit comme une forme de métamorphose - un changement de forme, de nature et de structure qui produit un corps visiblement différent; ce processus de transformation créé une profonde détresse pour les femmes séropositives qui souffrent de lipodystrophie. Les résultats de l'étude montrent d'une part, la détresse (physique et mentale) engendrée par ce corps métamorphosé et attestent, d'autre part, des stratégies de résistance manifestées par ces femmes qui contestent l'in/corporation des antirétroviraux et le pouvoir du complexe médico-pharmaceutique sur leurs corps.

O108
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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OBJECTIVES: 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. 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 also experienced catastrophic losses in their community-of-meaning. We asked: What are the bereavement experiences of HIV+ and HIV– long term survivors? How does HIV sero-status affect bereavement experiences? How can the bereavement experiences of HIV+ and HIV– long term survivors inform capacity building in the Ontario AIDS movement?
METHODS: This research used a qualitative, participatory, action-research approach. A mixed sero-status team 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– bereaved. Data was themed from interviews and groups. All participants then made up a 3rd blended group that reviewed and analyzed the data from both groups and collaborated in the development of research conclusions and recommendations.
RESULTS: 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 linear, one-dimensional manner, but rather as a dynamic, multidimensional process of "leaving normal". This study notes distinctions between HIV+ and HIV– individuals. Survivors' experiences also point to creative strategies of resiliency.
CONCLUSIONS: There is a lack of awareness of the complexity of AIDS bereavement experienced by long term survivors, accompanied by a backlog of grief 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.

O109
UNDERSTANDING HIV TREATMENT ATTRITION: INVESTIGATING THE BARRIERS IN ACCESSING AND ADHERING TO HIV TREATMENT AMONG YOUNG PEOPLE LIVING IN A RURAL UGANDAN TRADING CENTRE – A QUALITATIVE STUDY

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BACKGROUND: Since 2004, universal, free, HIV treatment has been available in Uganda. Since implementation, however, there remains a paucity of research investigating the barriers young people face attempting to both access and adhere to such programs. This study qualitatively explored HIV related vulnerabilities among young, HIV positive people; examining the roles of gender, economic power and food security in both accessing and adhering to treatment in this trading centre.
METHODS: Within a grounded theory framework, 47 in-depth interviews (26-women, 22-men) with self-identifying HIV positive young people ages 18-30 were held, in Luganda language, over 8 months. Self-reported adherence calendars were submitted monthly over 3 months. Key themes and issues were identified, coded and analyzed by the Ugandan-Canadian research team.
RESULT: Young people face a continuum of barriers as they negotiate across the path of accessing and adhering to treatment, including power imbalances and food insecurity. While free treatment availability provides an incentive to access, food and economic insecurities create considerable challenges to adherence. Living in town removes the traditional access to family land and food; in town, inability to afford food leaves youth unable to adhere to treatment. Rent in town is also higher, leaving many reliant on living with their employers or partners, resulting in a power imbalance and an inability to access treatment. Such barriers create an attrition cascade and patients are found to eventually fall off of treatment.
CONCLUSIONS: Young peoples' access to treatment is contingent upon job, land and food security. Although there remains minimal literature regarding the challenges young people meet to both access and remain adherent to HIV care, this study highlights the very clear challenges faced by this vulnerable group. Access and adherence programming must consider the more comprehensive, community needs of this group of young people when tailoring town-based HIV treatment programs.

O110
A HAART FULL OF LIFE: VARIATIONS IN QUALITY OF LIFE AMONG ABORIGINAL AND NON-ABORIGINAL PEOPLES EVER ON ANTIRETROVIRAL THERAPY

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BACKGROUND: Aboriginal people remain over-represented in the HIV/AIDS epidemic in Canada. Quality of life, an important factor in overall health and well being, is significantly impacted by highly active

antiretroviral therapy (HAART). Our objective was to compare the quality of life of Aboriginal and non-Aboriginal participants in a cohort of persons on HAART.

METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ individuals on HAART. Explanatory variables are collected through a comprehensive interviewer-administered survey and clinical variables are collected through a linkage with the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Associations between Aboriginal status and categorical variables were tested using Fisher's Exact Test and associations between Aboriginal status and continuous variables were tested using the Wilcoxon Rank-Sum Test. A multivariable model was used to investigate the association between Aboriginal ethnicity and quality of life while accounting for potential confounders.

RESULTS: Of 457 LISA participants, 150 (33%) reported Aboriginal ethnicity. Aboriginal ethnicity was associated with younger age, being female, lower CD4 count, higher viral load, lower education, unstable housing, food insecurity, higher depression, current illicit drug use, and ever being incarcerated. In regards to the quality of life scale, Aboriginal participants reported greater life satisfaction, more health worries and lower HIV mastery in unadjusted analysis. After adjusting for clinical variables, being Aboriginal remained associated with greater life satisfaction. After adjusting for clinical and socio-demographic variables, Aboriginal ethnicity was significantly associated with greater life satisfaction, fewer financial worries, and higher provider trust.

CONCLUSION: Positive quality of life results highlight the resilience of the Aboriginal population despite worse socio-economic and clinical status. Findings also indicate that, although clinical outcomes for Aboriginal peoples need improvement, the positive experiences of Aboriginal people already receiving HAART should encourage the expansion of culturally appropriate antiretroviral therapy programs.

O111
THE LIVING WELL LAB: ASSESSING THE IMPACT OF A HEALING-BASED/NON-PROFIT WELLNESS MODEL ON THE QUALITY OF LIFE AND REHABILITATION OF PERSONS LIVING WITH HIV/AIDS

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BACKGROUND: Complementary therapies (CT) are becoming a pillar in the preventative and rehabilitative efforts for many PLWHAs. A community-based research program called the Living Well Lab (LWL) was established at Friends For Life (FFL), a non-profit wellness centre in Vancouver, Canada that offers free CTs to people living with life threatening illnesses. The objective of the LWL was to explore, through a participatory, community-based process whether FFL's services reduce symptoms and/or improve health and quality of life (QOL) for FFL's clients.

METHODS: A longitudinal, mixed methods approach assessed health and QOL-related outcomes and experiences for 194 of FFL's PLWHA clients. Participants completed a series of five outcome packages, developed in conjunction with FFL clients and staff over18 months. Questionnaires focused on such areas as changes in physical and emotional states, satisfaction with services, social support and personal transformation. Interviews and focus groups were also conducted with 79 members to learn more about their experiences using CTs at FFL. Descriptive analysis was used to summarize the data.

RESULTS: The LWL provided FFL with a tremendous amount of information on how to most effectively support members in their wellness journeys. Participants' main reasons for visiting FFL are to relax, for nutrition support and daily social support. Participants have complex health histories with two-thirds (69.8%) reporting three or more health concerns (means=3.4) for which they are seeking treatment. Significant improvements in outcomes among participants were detected in the areas of pain, stress, energy levels, client enablement and personal transformation.

CONCLUSION: Findings suggest that CTs have the potential to significantly impact PLWHAs' physical, social and mental wellbeing and illustrate the positive impact of CTs delivered in a non-profit setting.

O112
WORKING TOGETHER TO SUPPORT MENTAL HEALTH FOR ASO CLIENTS

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Lack of access to mental health and addictions supports for people living with HIV/AIDS/HCV in BC is resulting in a significant burden of care for ASOs. Trap Doors: Revolving Doors (2008) is a province wide needs assessment which examines the prevalence rates of mental health and addictions issues for people living with HIV/AIDS/HCV who are accessing services from AIDS Service organizations (ASOs). The study also explores the barriers this group has in accessing mental health treatment and support.

Over 45 interviews and questionnaire responses inform the study. Respondents included professionals working for community-based AIDS service organizations as well as leaders from Public Health and Mental Health and Addictions Services (BCMHAS).

Data gathered for the report indicates that 4 in 5 clients accessing services from an ASOs experience or exhibit symptoms of a mental health disorder in their lifetime. These conditions are frequently undiagnosed and untreated. The disorders encompass the entire scope of mental illness and range from mild to severe and debilitating. This is in contrast with Canadian population estimates that indicate that 1 in 5 Canadians experience a mental health disorder during their lifetime. While the prevalence of mental health disorders is significantly increased for the ASO clients, estimates are that only 10% this population are accessing formal mental health care as opposed to 40% of the population without HIV/AIDS/HCV.

A province wide working group comprised of community stakeholders, Public Health and Mental Health leaders has recently been established by the Provincial Health Services Authority to provide a multidisciplinary platform to discuss future initiatives related to mental health/addictions and HIV/AIDS/HCV. The working group will review, validate and broaden the recommendations from Trap Doors: Revolving Doors and discuss the components for establishing a sustainable process for enhancing mental health/addictions supports to people living with HIV/AIDS/HCV in British Columbia.

Basic Sciences - Immunology

P113
REGULATION OF IL-12 FAMILY OF CYTOKINES IN HUMAN MONOCYTES FOLLOWING HIV INFECTION

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IL-12 is an immunoregulatory heterodimeric cytokine that has an important role in the regulation of cell-mediated immune responses. The activity of IL-12 cytokine is decreased in HIV-infected individuals. Recently, two heterodimeric cytokines were discovered, IL-23 and -27, that are structurally related with IL-12. The IL-12 cytokine family is produced by monocytes, macrophages and dendritic cells. Since these cells connect the innate and adaptive immune system by regulating Th1 responses, they can also play a crucial role in HIV immunopathogenesis. Furthermore, monocytes are among the first cells targeted by HIV at mucosal surfaces upon initial infection and play a key role in host defense mechanisms against invading pathogens. To date, the function that IL-23 and IL-27 have in HIV infection is poorly understood.

We hypothesized that HIV alters the expression of IL-23 and IL-27 in addition to that of IL-12. By observing monocytic cells, we investigated the effects of HIV infection on spontaneous, as well as IFN-γ-induced production of IL-23 and IL-27.

We use human monocytic cells from healthy donors as a model system, in order to determine the signaling pathways involved in the regulation of IL-23 and IL-27. During the last few years, our laboratory has investigated the molecular mechanisms that regulate IL-12 synthesis in human monocytes. We have demonstrated that LPS-induced IL-12p40 production is regulated by three distinct signaling pathways including MAPK, PI3K and CaMK-II. Our newest findings indicate the IL-27 production in LPS-stimulated monocytes is regulated via p38 and JNK MAPK, as well as through PI3K.

Given the central role of IL-12 in mounting a proper immune response when clearing a chronic infection, changes in its regulation throughout HIV-infection could illustrate key factors in the development of this disease. Furthermore, it may explain how this retrovirus employs immune system mechanisms to evade elimination by the host. Our research will provide further understanding of the effects that HIV has on Th1 cytokine expression and may suggest novel strategies intended to enhance immune responses against HIV infection.

P114
HIV REGULATES IL-23 AND IL-27 EXPRESSION

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The human immunodeficiency virus (HIV) is responsible for the loss of immune system function leading to the development of AIDS. HIV can evade the host immune system by modulating cytokine expression and function. HIV-mediated modulation of crucial Th1 cytokines such as interleukin (IL)-12, IL-23 and IL-27 may play an important role in HIV pathogenesis by controlling the immune response to pathogen infection. The effect of HIV on the expression and function of IL-23 and IL-27 is presently unknown. Our hypothesis is that HIV and HIV regulatory proteins (tat and vpr) modulate IL-23 and IL-27 expression as well as activity, contributing to the loss of cell-mediated immunity and disease progression. The objective of this study is to determine the effect of HIV, tat and vpr on IL-23 and IL-27 promoter activity and expression.

The promoters of the IL-23 and IL-27 subunits, p19, EBI3 and p28, up to –3000 bp upstream of the start codon were cloned from human genomic DNA into the pGL3B luciferase reporter plasmid. Luciferase activity was determined in LPS-stimulated HL-60 cells. LPS-stimulated IL-23 and IL-27 protein production was also assessed by ELISA. Preliminary results suggest that luciferase activity is stimulated by LPS in the longer (–3000 and –2000 bp) promoter constructs for each of the p19, EBI3 and p28 genes. IL-27 production in the cell culture supernatant is induced by LPS whereas IL-23 levels appear to be unaffected or slightly decreased. The Tat and VPR genes have been cloned from the p89.6-HIV genome plasmid into the pLXIN retrovirus expression system and transfected into the PT67 retrovirus packaging cell line. HIV-Tat and VPR expression retroviruses are currently being characterized and will be used to determine their effects on IL-23 and IL-27 expression. It is likely that HIV will regulate IL-23 and IL-27 expression and HIV pathogenesis.

P115
BIOINFORMATICAL ANALYSIS OF EPITOPE REPERTOIRE OF HLA CLASS I ALLELES ASSOCIATED WITH DIFFERENT OUTCOMES OF HIV-1 INFECTION

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OBJECTIVE: Comparison of epitope repertoire between HLA class I alleles associated with resistance and those associated with susceptibility to HIV-1 infection in the Pumwani Sex Worker Cohort by a bioinformatical approach.

MATERIALS AND METHODS: A bioinformatical approach was used to compare epitope repertoire of HLA class I alleles associated with resistance or susceptibility to HIV-1 infection identified in the Pumwani sex-worker cohort. NetMHC 3.0 server (Centre for Biological Sequence Analysis) and MHC-I Peptide Energy Binding Predictor (Microsoft) were used to predict epitopes of HLA alleles with HIV-1 clade A1 consensus sequences. The epitopes of HLA class I alleles associated with resistance or susceptibility to HIV-1 infection were also compared based on the confirmed epitopes in the Los Alamos HIV database (LANL) and Immune Epitope database (IEDB). Statistical analyses were done using SPSS 13.0.

RESULTS: NetMHC predicted 5 to 35 epitopes for the resistant alleles with an average of 22 across the HIV-1 genome, whereas, it predicted 17 to 58 epitopes for the susceptible alleles with an average of 38. The same trend was also seen in the confirmed epitopes identified in IEDB and LANL. To determine the difference in epitope repertoire per subject, the predicted epitopes of 128 HIV-1 resistant and 679 seropositive women fully typed for HLA class I alleles were compared. We found that overall individuals who are resistant to HIV-1 infection recognize fewer epitopes than those who are HIV-1 infected ($p = 0.014$).

CONCLUSION: Epitope prediction using several bioinformatical algorithms showed that HLA alleles associated with resistance to HIV have a narrower epitope repertoire than the alleles associated with susceptibility. HIV-1 resistant individuals recognize fewer epitopes than HIV-1 infected individuals. The result is consistent with previous studies of T cell response of HIV resistant women in Pumwani cohort and HEPS in other populations.

P116
EFFECTS OF HIV-1 ON DENDRITIC CELL MATURATION

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OBJECTIVES: Dendritic cells (DC) are mediators of the adaptive immune response responsible for the presentation of antigen to naïve T-cells in secondary lymph organs. The effects of HIV on DC maturation are not well established and conflicting results have been reported. The objective of this study is to evaluate the effects of HIV-1 on the maturation of monocyte derived dendritic cells (MDDCs) in vitro. Surface molecule expression, phagocytic activities, antigen presentation and mitogen activated protein kinase activity over the course of DC maturation will be measured.

METHODS: Monocytes isolated from peripheral blood mononuclear cells were differentiated into immature MDDCs according to the established methods. Cells were incubated with live HIV-1(CS204) and then examined prior to and following maturation with TNFα, IL-1β, IL-6 and PGE2. Expression of CD14, DC-SIGN, CD80, CD86, CD40, CCR7, MHC I and MHC II were examined by flow cytometric analysis. To measure endocytosis, immature MDDCs were incubated with HIV(CS204) followed by a 1 hour incubation with FITC-conjugated dextran followed by flow cytometric analysis.

RESULTS: Following incubation with HIV significant decreases in expression of CD14, and DC-SIGN accompanied by significant increases in CD40, CD80, CD86, and MHC II expression were observed. The maturation-inducing cytokine cocktail induced greater decreases in CD14 and DC-SIGN and increases in the expression of CD80, CD86, and MHC II when HIV was present. Furthermore, CD40 expression appeared to be

particularly sensitive to the presence of HIV as its expression after exposure to HIV increased to levels similar to those induced by the inflammatory cytokine cocktail control at all time points. Endocytosis of FITC-dextran was also observed to be altered by HIV with the effects being dependent on the duration of exposure to virus.
CONCLUSION: In vitro HIV-1(CS204) appears to alter maturation and endocytotic activity of MDDC in a dose and time dependent manner. Understanding the mechanisms of dendritic cell dysfunction in HIV infection will provide further insight into HIV immune pathogenesis.

P117
LEUKOCYTE EXTRACT REDUCES HIV REPLICATION AND MODULATES CELLULAR FACTORS INVOLVED IN HIV INFECTION

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HIV pandemic has posed a challenge to the biomedical-research. The development of antiretroviral therapies to combat HIV infection has resulted in a decrease in morbidity and mortality associated with the acquired immunodeficiency syndrome (AIDS). Despite these therapeutic advances, problems of drug resistance, latent viral reservoirs, and drug induced toxic effects that compromise effective viral control point to the need for new classes of anti-HIV drugs with different modes of action. Dialyzable Leukocyte Extract (DLE) is a low molecular weight dialyzable material obtained from human leukocytes. In HIV/AIDS patients DLE treatment has shown a remarkable delay in progression to AIDS in early stage of infection. In vitro DLE shows a significant inhibitory effect on HIV replication and an important decrease in LPS-induced TNFα production. The inhibition ranged from 60-90% according to the viral challenge. In addition, others results shown DLE modulation of important endogenous factors involved in HIV immunopathogenesis like transcription factors NFκB and Sp1. All these findings correlated with DLE inhibitory effect on HIV in vitro replication. The inhibition of HIV replication observed with DLE treatment could be mediated by inhibition of transcription factors that may promote replication of HIV. Also, it could be mediated or potentiated by modulation of endogenous factors involved in HIV replication.

P118
DEVELOPMENT OF A CYTOMETRIC BEAD ARRAY FOR THE DETECTION OF INNATE FACTORS ASSOCIATED WITH MOTHER-TO-CHILD HIV TRANSMISSION THROUGH BREAST MILK

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HIV-infected human breast milk (HBM) accounts for one to two thirds of pediatric HIV cases globally. However, multiple observational studies have shown that children who are exclusively breast-fed (EBF) by their HIV-infected mothers are less likely to become infected compared to non-EBF children. We hypothesize that mother-to-child (MTC) HIV transmission is closely linked to specific innate factors present in the mother's milk. We are developing a cytometric bead array (CBA) that is capable of simultaneously quantifying multiple innate factors in a small volume of breast milk, and produces results comparable to existing laboratory assays. Using the CBA, we will establish medians and ranges of known and novel innate factors in HIV-uninfected breast milk. Once baseline measurements are established, we will quantify these innate factors in historic HBM samples from Southern African HIV-infected mothers who either did or did not EBF. Viral load and clinical diagnosis of mastitis will also be determined. These data will then be compared to show any correlation between innate factor levels and HIV transmission rates. HBM samples are collected within one week, at one month, three months, and six months post-partum following normal vaginal deliveries. Samples are processed the same day that they are collected. Quantification of innate factors will be completed using our CBA system. We have successfully designed and are standardizing custom beads capable of detecting multiple innate factors in HBM through flow cytometry. In preliminary experiments completed with HBM from HIV-uninfected women, innate factor levels were consistent with published papers that specifically measured IL-8, SLPI, IL-7, lactoferrin, lysozyme, and RANTES. Preliminary results using our CBA platform show high levels of sensitivity and specificity to detect specific innate factors in HBM. Further testing is required on a larger number of samples to conclusively address our hypothesis.

P119
KILLER-CELL IMMUNOGLOBULIN RECEPTORS (KIR) 3DL/DS1 ASSOCIATIONS WITH HIV-1 SUSCEPTIBILITY AND RESISTANCE IN THE PUMWANI SEX-WORKER COHORT

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OBJECTIVES: Women enrolled in the Pumwani Sex-worker Cohort, established in Nairobi, Kenya in 1985, are heavily exposed to HIV-1, yet a subgroup within the cohort remain seronegative and appear to be resistant to HIV-1 infection. To study the role of KIR3DL/S1 and HIV-1 resistance, exons 2, 3, and 4 of 363 women (291 infected and 72 resistant women) were sequenced and analyzed.
METHODS: Genomic DNA was isolated from whole blood samples. Exons 2, 3, and 4 of the KIR3DL1 loci were PCR amplified, sequenced using BigDye Terminator Cycle Sequencing Kits (Applied Biosystems), and genotyped using a Taxonomy-Based Sequence Analysis (TBSA) computer program. Statistical analysis was conducted using SPSS™ 13.0.
RESULTS: Two 3DL1 allele groups were associated with resistance: 3DL1*001 group (3DL1*00101/016/026) (ρ=0.028; OR:1.841; CI95%:1.065-3.183) and 3DL1*005 group (3DL1*00501/041) (ρ=0.002; OR:3.287; CI95%:1.606-6.731). Individuals homozygous for 3DL1*001 group (ρ=0.001; OR:4.173; CI95%:1.697-10.264), and individuals heterozygous for 3DL1*005 group (ρ=8.377e-005; OR:4.077; CI95%:1.939-8.572) were more likely to be resistant to HIV-1 infection. The 3DL1*002 allele group (3DL1*002/007/008/01501/01502/018/023/025/029/031) was associated with susceptibility (ρ=0.019; OR:0.539; CI95%:0.320-0.907) and was the most prevalent allele group within the cohort at a frequency of 60.10%. Individuals heterozygous for 3DL1*005 group were more likely to remain seronegative (LR:5.850; ρ=0.016), while those with 3DL1*002 allele group were more likely to seroconvert (LR:10.237; ρ=0.001). KIR3DS1 subtypes were notably rare within the cohort with a frequency of 0.80%.
CONCLUSIONS: The results indicate that KIR3DL1 are important factors in HIV-1 resistance and susceptibility, within the Pumwani Sex-worker cohort.

P120
THE ROLE OF IL-7 IN THE SURVIVAL AND FUNCTION OF MEMORY CD8+ T CELLS DURING HEALTH AND HIV INFECTION

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BACKGROUND: Memory CD8+ T cells proliferate and gain effector function during a recall response to antigenic stimulus. Since IL-7 is required during a primary immune response it is possible that IL-7 may also enhance antigen-mediated CD8+ T cell recall responses. During HIV infection, CD8+ T cell function is impaired, and this may due to the down-regulation of the IL-7Rα (CD127), or impaired IL-7 signalling within the CD8+ T cells. In the present study, the effect of IL-7 on antigen-mediated proliferation and function of memory CD8+ T cell subsets was evaluated in healthy and HIV-infected individuals.
METHODS: CD8-depleted peripheral blood mononuclear cells were pulsed with a peptide pool (CMV, EBV, influenza), and co-cultured with autologous memory CD8+ T cells (TCM:CD45RA-CCR7+; TEM:CD45RA-CCR7-; TEMRA:CD45RA+CCR7-) in the presence or absence of IL-7 (1-50ng/ml). Cellular function (IFN-γ and CD107a/CD107b) was measured after 6 hours of co-culture, and cell division was analyzed after six days of co-culture by flow cytometry (CFSE).
RESULTS: As expected, the presence of antigen enhanced CD8+ T cell proliferation in the TCM and TEM subsets. Expression of CD107 was increased in all subsets, and IFN-γ production was increased in the TEM subset. The addition of IL-7 resulted in an enhancement of antigen-induced proliferation in the TCM and TEM subsets. IL-7 also caused a minor increase of CD107a/107b and IFN-γ production in the TEM and

TEMRA cell subsets. Studies of CD8+ T cells from HIV infected individuals are underway.
CONCLUSION: The presence of IL-7 can lead to an increase in antigen-mediated proliferation and function of memory CD8+ T cells. These results further our understanding of the mechanisms required during a secondary immune response, and is relevant to the ongoing studies of HIV pathogenesis and of IL-7 as a therapeutic in HIV infection and other diseases.

P121
TLR-3, TLR-4 AND TLR-9 AGONISTS PROTECT HUMAN MONOCYTIC CELLS AGAINST HIV-VPR-INDUCED APOPTOSIS: A CRITICAL ROLE FOR CALMODULIN-DEPENDENT PROTEIN KINASE-II AND AN ANTI-APOPTOTIC CIAP-2 GENE

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AIDS progression is characterized by rapid depletion of immune cells like CD4 positive T cells. Monocytic cells, however, survive HIV replication and consequent cytopathic effects because of their decreased sensitivity to HIV-induced apoptosis. HIV persists in these cells, shielded against various host-antiviral responses and anti-retroviral therapies. Determining how HIV induces resistance against apoptosis in human monocytic cells and how this protection can be reversed is vital for designing AIDS treatment regimes aimed at destroying viral persistence and for minimizing the spread of infection by monocytes. Elevated levels of microbial products in plasma of chronic HIV patients have been reported. Activation of monocytic cells by such microbial products through interaction with corresponding Toll-like receptors (TLRs) may confer them with anti-apoptotic signals, rendering them resistant to HIV induced apoptosis. Using HIV-Vpr52-96 peptide as a model apoptosis-inducing protein, we have demonstrated that TLR-3, TLR-4 and TLR-9 agonists induce resistance to Vpr-induced apoptosis in primary human monocytes and THP-1 cells. This resistance is mediated by the endogenously produced cytokine, TNF-alpha. Our results suggest that anti-apoptotic c-IAP2 gene and calcium signaling pathway play a crucial role in conferring resistance induced by the multiple TLR-agonists against Vpr-mediated apoptosis in human monocytic cells. Monocytes of HIV-infected patients may develop a reduced propensity to undergo apoptosis at least in part due to the presence of transmigrated microbial products from the gut as well as due to endogenous TNF-alpha. Strategies based on suppression of TNF-alpha production may be helpful in controlling HIV reservoir formation.
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P122
QUANTITATIVE DETERMINATION OF HIV SPECIFIC IGG FROM DRIED BLOOD SPOTS OVER TIME

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Collection, transport and storage of blood specimens represent major public health challenges. Here, the potential of dried blood spots at preserving the integrity of 11 HIV specific antibodies over extended period of time was assessed and compared to frozen plasma.
Recovery and longevity of HIV specific IgG eluted from dried EDTA-blood (DBS) and plasma (DPS) spots (n=15) stored at room temperature were evaluated over a one year period. HIV specific IgG to 11 HIV proteins were determined simultaneously using a protein array (Luminex). IgG concentrations were determined using anti-IgG coupled beads and human IgG reference serum. The same anti-IgG-biotin conjugate and reporter were used to reveal IgG bound to HIV protein and anti-IgG beads.
In frozen plasma, less than 5% difference was observed in IgG concentration over a 2 month period. HIV specific IgG concentration from DPS after 1 and 8 weeks were 20-30 % (0.1-0.15 log) lower than in frozen plasma whereas IgG from DBS showed a 50-60% (0.3-0.4 log) loss over the same period. The loss of HIV IgG reached 60% (0.4 log) in DPS and 70% (0.5 log) in DBS after a one year period.
In cases where IgG to HIV proteins reached concentrations of 6-7 log, the observed loss of HIV IgG over a one-year period is unlikely to affect results in immunoassays. However, such antibody loss may become important when the population under study have much lower antibody concentrations (i.e. early infection). This quantitative determination of HIV specific IgG from DPS and DBS over time contributed to a better characterization and limit of this frequently used method of blood collection and preservation and paved the way to the evaluation of newly developed support for specimen preservation and archival.

Basic Sciences – Pathogenesis (Including Host Genetics)

P123
ASSOCIATIONS OF EXTENDED HLA-CLASS II HAPLOTYPES WITH RESISTANCE OR SUSCEPTIBILITY

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OBJECTIVES: To characterize the distribution of extended HLA class II haplotypes and assess their role in resistance and susceptibility to HIV-1 infection in the Pumwani Sex worker Cohort.
DESIGN: A subset of women in the Pumwani Sex worker Cohort, established in 1985 in Nairobi, Kenya, remain HIV-1 negative despite frequent exposure to the virus through active sex work. Specific CD4+ T-cell responses, influenced by HLA class II, have been shown to associate with resistance to HIV-1 infection, demonstrating the importance of HLA class II based anti-HIV-1 immunity. Seven hundred and thirty six women, of whom 119 were resistant to HIV-1 infection, were genotyped for DQA1, DQB1, DPA1, DPB1, and DRB1 using a high-resolution sequence-based method. Extended haplotype frequencies were determined using PyPop32-0.6.0. Statistical analysis was conducted with SPSS-13.0. Haplotypes with five or more copies in the population were tested for associations with resistance or susceptibility to HIV-1 infection by chi-square analysis and the Fisher's exact test.
RESULTS: Forty unique DQA1-DQB1-DPA1-DPB1-DRB1 haplotypes were present at more than five copies in the population. The three most frequent haplotypes were DQA1*040101-DQB1*0602-DPA1*010301-DPB1*020102-DRB1*1503 (2.89%), DQA1*010201-DQB1*0602-DPA1*010301-DPB1*020102-DRB1*1503 (2.55%), and DQA1*050101-DQB1*030101-DPA1*0301-DPB1*0402-DRB1*030201 (2.14%). The haplotype DQA1*050101-DQB1*030101-DPA1*020202-DPB1*010101-DRB1*1102 (P=0.010; OR:5.119; CI95%:1.535-17.069) was associated with resistance to infection. The haplotypes DQA1*010201-DQB1*0602-DPA1*010301-DPB1*040101-DRB1*1503 (P=0.019; OR:Infinite; CI95%:Infinite) and DQA1*010201-DQB1*0602-DPA1*0301-DPB1*0402-DRB1*1503 (P=0.005; OR:Infinite; CI95%:Infinite) were only found in HIV-1 positive women and were associated with susceptibility to infection.
CONCLUSIONS: The association of these extended HLA class II haplotypes with resistance or susceptibility to HIV-1 infection further emphasizes the importance of HLA class II specific CD4+ T cell responses against HIV-1. The results complement current knowledge on HLA class II single locus associations with resistance or susceptibility to HIV-1 infection.

P124
SUBCLINICAL ENDOTOXEMIA IS ASSOCIATED WITH HIV/AIDS AND INNATE IMMUNE DYSFUNCTION IN KENYAN COMMERCIAL SEX-WORKERS

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OBJECTIVE: Recently, increased plasma endotoxin (LPS) levels, presumably from microbial translocation of bacteria across an HIV-associated leaky gut, have been proposed as a driver of immune activation and AIDS pathogenesis in a North American study. We aimed to assess plasma endotoxin levels in HIV infected and uninfected commercial sex-workers in

Kenya without evidence of sepsis, and examine the proinflammatory signaling of LPS in the setting of HIV.
METHODS: In 88 HIV infected and uninfected women from the Pumwani cohort in Nairobi who were sampled during routine follow-up, we determine plasma endotoxin levels using an ultra sensitive LAL assay. Disease stage was determined by CD4 counts. HIV RNA viral load was available in 44/57 HIV infected subjects. Peripheral blood mononuclear cells (PBMC) from select subjects were cultured in the presence of LPS and other Toll-like receptor (TLR) ligands and analyzed for expression and proinflammatory cytokine responses.
RESULTS OBTAINED: Being infected with HIV was significantly associated with increased plasma endotoxin levels (P <.01) among Kenyan commercial sex-workers. Neither CD4 level not HIV viral load correlated with the level of endotoxin detected. An HIV ssRNA analog increased expression of the LPS receptor, TLR4, increased proinflammatory cytokine responses to LPS in PBMC. In HIV-uninfected subjects, repeat LPS stimulation of PBMC lead to proinflammatory tolerance, but pretreatment with HIV single-stranded RNA (ssRNA40) enhanced LPS proinflammatory responses. In HIV-infected subjects, neither LPS tolerance, nor ssRNA proinflammatory enhancement were observed.
CONCLUSION: Subclinical endotoxemia was associated with chronic HIV infection in this group, and may play a role in chronic HIV-associated disease. Dysregulated TLR signaling may further compromise regulation of inflammation in HIV infected subjects. Further study into the origin of endotoxin in this group, and its clinical and immunological effects are warranted.

P125
GENETIC SUBSTRUCTURE ANALYSIS OF AN EAST AFRICAN POPULATION

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OBJECTIVES: As the "cradle of humanity", East Africa contains the most genetically diverse population owing to early settlements and migrations. The population has also been under extensive selective pressure by various infectious diseases. Genetic epidemiology and disease association studies require a clear understanding of existing population genetic substructure to avoid spurious associations. We conducted population substructure analysis of a population of women enrolled in the Pumwani Sexworker cohort in Nairobi, Kenya.
METHODS: We used three different approaches to conduct population substructure analysis. First, HLA class I (A, B, C) were genotyped and haplotypes of more than 800 women were analyzed using arlequin 3.11. Second, 444 polymorphic SNPs randomly selected from 23 chromosomes from 432 individuals enrolled in the Pumwani Sexworker cohort were analyzed and compared with SNPs data from three HapMap populations, CEU (European), YRI (African) and CHB+JPN (Asian) using Structure 2.2. Third, we conducted Principle component analysis (PCA) of 423,688 SNPs with HelixTree 6.3.6 (Golden Helix).
RESULTS: These analyses showed that there is no significant population substructure in this East African population. As expected this East African population co-clusters with the African YRI population, but is genetically more diverse than the YRI population samples included in the HapMap study.
CONCLUSIONS: The population enrolled in the Pumwani Sexworker cohort is genetically homogenous. There is no significant population substructure in this East African population. This East African population is more genetically diverse than the Yoruban population in the Hapmap study and can be distinguished from the Yoruban population with 423,688 SNPs included in the Affymetrix GeneChip 5.0.

P126
A TRIM5α EXON 2 POLYMORPHISM IS ASSOCIATED WITH PROTECTION FROM HIV-1 INFECTION IN THE PUMWANI SEX WORKER COHORT

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OBJECTIVES: TRIM5α, a component of the innate immune response, is able to restrict HIV-1 in some primate species. Human TRIM5α has shown slight anit-HIV-1 activity, and effectively blocks infection by other retroviruses such as the n-tropic murine leukemia virus. Studies have suggested that certain polymorphisms in huTRIM5 may alter its affinity for HIV-1. These studies have shown conflicting results, particularly with respect to exon 2 polymorphisms. A group of sex workers enrolled in the Pumwani cohort have remained HIV-1 seronegative and PCR negative despite prolonged exposure through sex work. To investigate the role of TRIM5α exon 2 SNPs on HIV-1 infection in the Pumwani cohort, TRIM5 exon 2 genotyping analysis was performed on 508 individuals (including 107 resistant individuals with an average follow-up time of 9.6±4.3 years).
METHODS: Genomic DNA was isolated from whole blood and PBMC samples of HIV-1 positive and seronegative individuals. TRIM5 exon 2 was PCR amplified and sequenced using ABIPRISM BigDye Terminator Cycle Sequencing Ready Reaction Kits. Sequences were analyzed with ABI3100 Genetic Analyzer.
RESULTS: A TRIM5α SNP, 136Q, was enriched in HIV-1 resistant individuals (38.1% versus 14.4%;p=4.53e-8;OR:3.65;CI95%:2.3-5.9) and women with 136Q were significantly less likely to seroconvert (p=0.0004;LR:12.510). The associations of 136Q with HIV-1 resistance (p=4.720e-5; ExpB:0.326;CI95%:0.19-0.56) and a decreased risk of seroconversion (p=2.849e-3;ExpB:2.776;CI95%:1.42 - 5.43) were found to be independent of previously identified resistance alleles. On the other hand, wild type TRIM5α exon 2 was found to be associated with susceptibility to HIV-1 infection (p=0.007;OR:0.283;95%CI:0.106-0.75) and rapid seroconversion (LR:14.475;p=0.001). No associations between individual TRIM5 SNPs and disease progression were observed.
CONCLUSIONS: These findings indicate that changes in TRIM5 may play an important role in the retroviral restriction activity of huTRIM5α. Specifically, a shift to glutamine at codon 136 appears to confer protection against HIV-1 in the Pumwani cohort.

P127
AN INVESTIGATION INTO THE ROLE OF A CD4 POLYMORPHISM IN SUSCEPTIBILITY TO HIV INFECTION AND DISEASE PROGRESSION IN AN AFRICAN FEMALE SEX WORKER COHORT

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INTRODUCTION: Single nucleotide polymorphisms (SNPs) can be an important factor in determining an individual's susceptibility to HIV infection and disease progression. In this linkage disequilibrium (LD)-based study, we investigated the putative role of the C868T SNP on CD4 and two flanking genes, GNB3 and MLF2, in susceptibility to HIV infection and disease progression in an African female sex worker cohort.
METHODS: A total of 884 women enrolled in the Pumwani Sex-worker Cohort were included in this study. Portions of the CD4, GNB3, and MLF2 genes were PCR-amplified and sequenced. The sequences were analyzed and SNPs were identified with CodonExpress™ software. LD was determined with Helix Tree (Golden Helix), and haplotypes were analyzed with SPSS.
RESULTS: Thirty-eight putative haplotypes were identified in this study. A relatively rare haplotype, CD4 C26475G-CD4 C868T-GNB3 C825T, was associated with an increased risk of seroconversion (p=0.003). Women with at least one copy of CD4 C26475G were more likely to seroconvert (Kaplan-Meier p=0.007, Fischer's Exact p=0.008). The CT/TT genotypes of CD4 C868T are associated with susceptibility to HIV infection (p=0.007, OR, 0.526, 95%CI, 0.327-0.847) and trend towards an increased risk of seroconversion (Log Rank, 2.96; p=0.085). HIV-infected individuals homozygous for the GNB3 C825T polymorphism were shown to have a slower disease

progression (p=0.0140) measured by rate of CD4 T cell decline to 200 cells/ml. GNB3 C825T is present in 25 different haplotypes, but no combination of these haplotypes are more significantly correlated with slower disease progression than the homozygous GNB3 C825T genotype.
CONCLUSION(S): Our study suggests that the previously observed involvement of CD4 C868T with increased risk of seroconversion may be due, in part, to linkage with a novel SNP, CD4 C26475G. No individual haplotype containing GNB3 C825T was shown to be responsible for the observation of slower disease progression in individuals homozygous for this SNP. This suggests that GNB3 C825T may be a major contributor to the observed protection from disease progression.

Basic Sciences – Virology

P128
PRODUCTIVE HIV-1 INFECTION OF CD8+ T-CELLS IS ASSOCIATED WITH THE DOWN-REGULATION OF THE CD8 AND CXCR4 CELL SURFACE MOLECULES

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BACKGROUND: To date, the effect of HIV-1 infection on CD8+ T-cells remains poorly studied. Previous studies have shown that the effector functions of the CD8+ T-cells diminish during AIDS. We postulated that CD8+ T-cell functions decrease due to the tropism of HIV-1 for CD8+ T-cells. Therefore we examined whether CD8+ T-cells provide suitable targets for HIV-1 infection and the mechanism(s) by which the virus enters the cells.
METHODS: HIV-1 infection was monitored by both ELISA and flow cytometric analysis. Similarly, cell surface receptors were assessed by flow cytometry and receptor expression confirmed by RT-PCR. CD8+ T-cell clones used in the studies were generated by HTLV-I transformation of peripheral blood-derived CD8+ T-cells.
RESULTS: CD8+ T-cells were most susceptible to T-cell tropic strains of the virus. Of interest, the CD8+ T-cell clones exhibited HIV-1 production 20-fold greater than CD4+ T-cells. During the course of infection, there was a decrease in mean expression of CD8 (46.0 ± 3.1%, $p < 0.01$, n=3) and CXCR4 (26.8 ± 11.8%, $p < 0.01$, n=4) on the surface of the CD8+ T-cell clones. Accordingly, the use of antibodies to the CD8 protein or the CXCR4 receptor eradicated viral binding and replication in the CD8+ T-cell clones. The susceptibility of CD8+ T-cells was not dependent upon the up-regulation or the expression of the CD4 receptor. RT-PCR analysis demonstrated the presence of CD4 mRNA in the CD8+ T-cell clones.
CONCLUSIONS: CD8+ T-cells served as suitable targets of the virus as HIV-1 infection and replication were supported in these cells. Our research was the first to show that productive infection of the clones resulted in the down-regulation of the CD8 protein and the CXCR4 receptor. The enhanced binding of HIV-1 to these receptors may in part explain the ability of the CD8+ T-cell clones to support high levels of viral replication.

P129
DISSECTING THE STEPS OF HIV-1 REPLICATION INHIBITED BY INTERFERON

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OBJECTIVE: Interferon represents one important mechanism against virus infection. In this study, we aim to assess the effect of interferon-alpha-2b on HIV-1 infection in different human cell lines and to determine the steps of HIV-1 replication that are blocked by interferon.
METHODS: Cell lines including SupT1, Jurkat, CBMCs (cord blood mononuclear cells), U937, and 293T cells were treated with different doses of IFN-alpha-2b for 16 hours followed by infection with HIV-1 pseudotyped by VSV G protein. Production of viruses was determined by measuring viral reverse transcriptase activity. We also assessed viral Gag expression by Western blots, viral RNA expression by Northern blots, viral cDNA production by real-time PCR.
RESULTS: Interferon-alpha-2b at a concentration of 1,000 units/ml inhibits HIV-1 production to various extents in different cell lines. No effect was measured in 293T cells, a 10 fold reduction was observed in Jurkat and U937 cells, more than 50 fold decrease was seen in SupT1 cells and CBMCs. However, the inhibitory effect was lost if interferon was added 16 hours following HIV-1 infection. Production of viral cDNA 16 hours following infection in SupT1 cells was inhibited by 2 fold as opposed to a more than 20 fold decrease of viral RNA and viral protein expression.
CONCLUSION: The effectiveness of interferon on HIV-1 infection varies in different cell lines. One major block takes place at the step of viral gene expression.

P130
ANALYSIS OF THE HIV TAT PROTEIN AND ITS FUNCTION IN DOWN REGULATING CD127 ON CD8 T-CELLS

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The HIV Tat protein is a small 14 kDa polypeptide required for transcription from the viral LTR. Interestingly, Tat is also secreted by infected CD4 cells and in a paracrine fashion has been shown to affect the activity of neighboring cells. We have shown Tat down regulates expression of the interleukin (IL)-7 receptor alpha-chain (CD127) on the surface of CD8 T-cells. Once inside the cell, Tat appears to interact with the cytoplasmic tail of CD127 at the cell surface causing receptor internalization and degradation through a process dependent on microtubules. Tat is composed of 6 domains: N-terminal, aa1-21; cysteine rich, aa22-37; core, aa38-48; basic, aa49-59, glutamate rich, aa60-73; and C-terminal, aa73-101. To determine which domains of Tat are required for CD127 down regulation, a series of His-tagged Tat proteins each lacking one of the functional domains have been cloned and purified using nickel columns followed by HPLC. Each of these proteins will be added to purified CD8 T-cells in culture and CD127 expression monitored by flow cytometry. We have already demonstrated full length Tat purified in this manner retains activity and down regulates CD127 on CD8 T-cells. To address specific inter-molecular interactions between Tat and CD127 as well as possible interactions with the cell's endocytic machinery, full length Tat and its deletion mutants will be used in co-immunoprecipitation experiments. Since IL-7 signaling is essential to CD8 T-cell proliferation, differentiation and effector function, Tat mediated down regulation of the IL-7 receptor likely contributes to CD8 T-cell anergy during HIV infection.

Clinical Sciences – Adherence

P131
ANTIRETROVIRAL DECISION MAKING PREFERENCES, MEDICATION INFORMATION NEEDS AND SOURCES OF MEDICATION INFORMATION IN HIV-POSITIVE PATIENTS

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OBJECTIVES: To determine the antiretroviral information needs and decision making preferences of HIV-positive patients.
METHODS: A cross-sectional study of a consecutively obtained convenience sample of HIV-positive patients receiving care at two Toronto clinics was conducted. Data were collected through a self-administered survey which underwent preliminary testing for face and content validity. The analysis was primarily descriptive. Simple bivariate statistics were used to examine the association between a preference for autonomous decision making and demographic, disease and enabling variables (e.g. Internet access).
RESULTS: Surveys were completed by 306 patients, among whom 53 were women. The majority of patients (72.5%) agreed or strongly agreed that they actively sought information about antiretrovirals. Information about drug effectiveness, side effect management and correct dosing were selected as very important by 92.3%, 84.6% and 89.9% of patients. Such information was perceived as being actually provided all the time by 57.5%, 49.8% and 78.6% of patients, respectively. Information about interactions between antiretrovirals and various drug categories was selected as very important by 50-80% of patients. HIV specialist was ranked highest by the majority of participants as most important (67.6%), easy to understand (53.7%) and trustworthy (66.5%) source of information. Approximately 39% of patients preferred to play a more

autonomous role in antiretroviral decision making, and 35% of patients described actually playing this role in decision making. No associations were observed between preference for autonomous decision making and any variable. Patients who actually played a more autonomous role in decision making were younger (43.7 vs. 46.2 years; p = 0.0475) and more likely to have access to the internet (85.1% vs. 74.6%; p = 0.0456) relative to patients who did not.
CONCLUSIONS: Most patients in this sample report actively seeking antiretroviral information, although there are discrepancies between information considered important by patients and information which is actually provided.

P132
WITHDRAWN

P133
SELF REPORTED HIV SYMPTOMS ASSOCIATED WITH NON-ADHERENCE TO TREATMENT

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OBJECTIVE: The aim of this study was to describe the most frequently reported HIV symptoms and identify its association with adherence to treatment.
METHODS: A cohort study of persons living with HIV (PLHIV) was initiated in Montreal in October 2004; 904 participants were recruited in medical clinics and community groups (mean age: 43.9 ± 9.5 years; men: 80%; heterosexuals: 41%; >5 years since diagnosis: 71%). At baseline, respondents completed an interviewer-administered questionnaire assessing HIV-related symptoms experienced in the last four weeks, and adherence to treatment.
RESULTS: On average, the participants reported 9.3 ± 4.43 HIV-related symptoms. The most frequently reported HIV-related symptoms were: fatigue and or loss of energy (78%), feeling nervous or anxious (74%), feeling sad, down or depressed (69%), difficulty falling or staying asleep (61%), muscle aches or joint pain (58%) and bloating, pain or gas in the stomach (51%). Factor analysis revealed 4 factors: 1) mood related symptoms, 2) neuromuscular symptoms, 3) physical well being symptoms, 4) gastro intestinal symptoms. Logistic regression of adherence on the four factors indicated that Factor 3 (i.e., physical well being symptoms, OAR: 1.38; IC 95%: 1.08 – 1.76) and Factor 4 (i.e., gastro intestinal symptoms, OAR: 1.27; IC 95%: 1.04 – 1.55) were significantly associated with non-adherence to treatment.
CONCLUSION: Even though the most-frequently reported symptoms were mood-related, non-adherence to treatment among PLHIV is mainly related to experiencing loss in physical well-being and the occurrence of gastro-intestinal problems.

Clinical Sciences – ARV Clinical Trials and Other ARV Studies

P134
IMPACT OF TREATMENT INTERRUPTIONS AND MEGA-ART ON HEALTH-RELATED QUALITY OF LIFE IN THE OPTIMA TRIAL

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BACKGROUND: While effective antiretroviral therapy (ART) increases survival in HIV-infected patients, the optimal management of treatment-experienced patients with multi-drug resistant (MDR) HIV and limited retreatment options remains uncertain. We evaluated whether ART interruption and/or intensification improved health-related quality of life (HRQoL).
METHODS: Options in Management with Antiretrovirals (OPTIMA) factorial-randomized 368 patients to a 12 week ART interruption, mega-ART (≥5 drugs), both strategies, or standard care. HRQoL was assessed with the Medical Outcomes Study HIV survey's physical (PHS) and mental (MHS) health summary scores, the Health Utilities Index (HUI3), EQ-5D, visual analog scale (VAS), standard gamble (SG), and time trade-off (TTO) at baseline, 6 weeks, 12 weeks, and every 12 weeks thereafter. Length of follow-up ranged between 1.5 and 6.25 years. Repeated measures regressions estimated the effect of treatment group assignment on HRQoL over time. Separate models related HRQoL to clinical measures.
RESULTS: There were no statistically significant differences in HRQoL between management arms. HRQoL increased slightly during the first three months of the trial, according to EQ-5D (0.003, ns), HUI3 (0.03, p <0.01), MHS (1.70, p <0.01), PHS (1.14, p <0.01), SG (0.05, p <0.01), TTO (–0.002, ns), and VAS (1.74, p=0.02). This was followed by a small annual decline in HRQoL (EQ-5D: –0.01, p <0.01; HUI3: –0.02, p <0.01; MHS: –0.49, p <0.01; PHS: –1.0, p <0.01; SG: –0.001, ns; TTO: 0.003, ns; VAS –0.61, p=0.03). Separate multivariate regressions found significantly lower HRQoL during AIDS-defining events (ADE), serious adverse events (SAE), low CD4 level (≤ 50 cells/mm^3), or within 90 days of death.
CONCLUSION: Among MDR-HIV infected patients, average HRQoL increased transiently after trial enrollment and subsequently declined. There were no differences by management strategy. Most instruments were sensitive to significant and clinically meaningful changes in health, including ADE and SAE, low CD4, and approaching death.

P135
PREDICTING DEATH, AIDS AND SERIOUS ADVERSE EVENTS IN THE OPTIMA TRIAL

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OBJECTIVE: To investigate the association between CD4 and/or plasma VL (pVL) measures and AIDS-defining events (ADEs), death or serious clinical adverse events (SAEs), 12 weeks after CD4/pVL measurement in the OPTIMA (OPTions In Management with Antiretrovirals) trial.
METHOD: We identified quarterly CD4 count and pVL measures based on 96 weeks of follow-up data. Outcomes were blindly adjudicated for attribution as HIV-related, antiretroviral (ART)-related, non-HIV- & non-ART-related, or undetermined. For each assessment, we determined whether death, ADEs or non-AIDS SAEs occurred within the next 12 weeks.
Separate GEE logistic regression models were fitted to determine the effect of CD4/ pVL on each outcome, controlling for other factors such as baseline CD4, pVL and the number of prior events.
RESULTS: A total of 348 patients with 4349 observations were selected for the analysis. During the 12 weeks following measurement, we found that death was more likely to occur among patients with lower CD4 (OR [95% CI] per 50 count increase: 0.71 [0.58-0.86]), or those with previous ADEs (2.90 [1.65-5.09]), one previous SAE (2.03[1.01-4.08]) or multiple SAEs (4.63 [2.58-8.30]). The odds of ADEs was higher with decreases in CD4 (per 50 count increase: 0.66 [0.50-0.87]), and increases in pVL (per 1 log increase: 1.51 [1.11-2.06]). Patients with lower CD4, lower baseline CD4, or having prior ADEs or SAEs were more likely to develop an SAE. Furthermore, we found that the number of prior events had a larger impact on HIV-related SAEs in comparison to non-HIV related and ART-related SAEs.
CONCLUSIONS: Among patients with multi-drug resistant HIV, limited re-treatment options and advanced immune deficiency, prior clinical events, CD4 count and plasma VL each have quantitative value for predicting short-term clinical outcomes. This knowledge may be used for prognosis, informing patients and caregivers, planning and management.

P136
IMMUNE RECONSTITUTION IN AIDS AFTER EFFECTIVE TREATMENT OF MULTI-DRUG RESISTANT HIV IN OPTIMA

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OBJECTIVE: Even with effective anti-HIV treatment and independent of immune reconstitution inflammatory syndrome, there is residual persistent risk of recurrent AIDS events with slow or low immune reconstitution. We measured CD4 response after effective suppression of HIV

plasma viremia (pVL) among patients with advanced AIDS and multi-drug resistant HIV (MDR-HIV).
METHOD: OPTIMA (OPTions In Management with Antiretrovirals) patients with effective 'salvage therapy' of MDR-HIV and sustained pVL suppression below 400 copies/μL for at least 12 weeks were selected for longitudinal follow-up of CD4 response from the point of first pVL suppression. Mixed-effect linear regression model was used to estimate the rate of change in CD4 counts during pVL suppression. Other covariates considered included age, baseline CD4 count, time since pVL suppression, and improvement in pVL.
RESULTS: Among 368 patients (median follow-up 3.7 yrs) enrolled, there were 161 suppressed patients (median length of suppression in years: 0.92[Q1-Q3: 0.48-2.15]) during the trial. Of these patients (97.5% male, median [Q1-Q3] age: 47.5[41.9-54.5]), their median nadir CD4, baseline CD4, and CD4 at the start of pVL suppression were 50[15-112], 140[78-244], and 197[120-295], respectively. The median log10 pVL drop from baseline to the suppression threshold value was 2[1.5-2.4]. Our model showed that after continuous pVL suppression, on average, CD4 increased 85 cells/μL in the first year, 54 in the second year and at a rate of 27 per year after two years. All other covariates in the model were significantly associated. A parallel analysis with a pVL suppression threshold of <50 copies/μL yielded similar results.
CONCLUSIONS: This analysis quantifies the rate of CD4 count response after effective antiretroviral therapies in AIDS and MDR-HIV, and may be used to individualize an estimate of the rate and degree of immune reconstitution in this context.

P137
CASTLE: ATAZANAVIR-RITONAVIR VS LOPINAVIR-RITONAVIR IN ANTIRETROVIRAL-NAÏVE HIV-1 INFECTED PATIENTS: 96 WEEK EFFICACY & SAFETY

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BACKGROUND: ATV/r has similar efficacy to LPV/r with more favorable lipid & GI profiles in treatment-naive HIV-infected patients after 48 weeks of therapy. Efficacy & safety through Week (Wk) 96 are presented.
METHODS: Randomized, open-label, prospective study of once-daily ATV/r vs twice-daily LPV/r, both with fixed dose tenofovir/emtricitabine in 883 treatment-naive patients. Analyses at Wk 96: % with HIV RNA <50c/mL, emergence of resistance, adverse events (AEs), Δ CD4 cell count & fasting lipids.
RESULTS: Overall 19% of subjects discontinued before Wk 96 (16% ATV/r, 21% LPV/r); 39 LPV/r subjects (9%) switched to tablet formulation after Wk 48.
Efficacy Results at Wk 96 – As-Randomized Subjects

Description	ATV/r, N=440	LPV/r, N=443	Difference Estimate, (95% CI; p-value), ATV/r - LPV/r
HIV RNA less than 50 c/mL, n/N (%), CVR NC=F (ITT)	327/440 (74)	302/443 (68)	6.1 (0.3, 12.0; p<0.05)
Qualifying HIV RNA greater than or equal to 100,000 c/mL	165/223 (74)	149/225 (66)	
Baseline CD4 less than 50 cells/mm^3	45/58 (78)	28/48 (58)	
VR-OC (OT)	326/365 (89)	302/345 (88)	1.6 (–3.1, 6.2, p=NS)
CD4, mean change from baseline, cells/mm^3	268	290	–21.2 (–43.3, 0.9; p=NS)

Virologic failure was low in both arms (30/440 ATV/r, 29/443 LPV/r; 7%). Grade 2-4 related hyperbilirubinemia was greater on ATV/r (7% vs <1%); grade 2-4 related diarrhea (12% vs 2%) & nausea (8% vs. 4%) were greater on LPV/r. Mean percent Δ in fasting TGs & TC from baseline were significantly lower on ATV/r vs LPV/r (13% vs 50% & 13% vs. 25% respectively, p < 0.0001).
CONCLUSIONS: Non-inferiority of ATV/r vs LPV/r was confirmed at Wk 96. In the ITT analysis, ATV/r had higher response rates. This difference in response was driven by discontinuations among subjects on LPV/r. ATV/r continues to demonstrate a better lipid profile and fewer GI AEs vs LPV/r.

P138
SIMPLIFICATION OF THERAPY (ART) WITH EFAVIRENZ/EMTRICITABINE/TENOFOVIR DF SINGLE TABLET REGIMEN VS. CONTINUED ART IN SUPPRESSED, HIV-INFECTED PATIENTS

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BACKGROUND: AI266073 is a 48 week, randomized, open-label, multicenter study with the primary objective of evaluating non-inferiority of simplification of ART to efavirenz/emtricitabine/tenofovir DF (EFV/FTC/TDF) vs. continuing baseline regimen (SBR).
METHODS: Patients on stable ART with HIV-RNA (VL) <200 copies/mL for ≥3 months were stratified by NNRTI- or PI-based ART, and randomized (2:1) to switch to EFV/FTC/TDF or continue SBR. The primary endpoint was maintenance of VL <200 copies/mL at 48 weeks by time to loss of virologic response algorithm (TLOVR) (intent-to-treat, missing = failure [ITT, M=F], Δ=15%); efficacy was also assessed by VL <50 copies/mL (TLOVR; ITT, M=F), and by last observation carried forward (LOCF) analysis where early discontinuations for an adverse event (AE) were considered failures.
RESULTS: 300 treated patients (EFV/FTC/TDF 203, SBR 97) were evaluated (prior PI/NNRTI 53%/47%). Treatment arms were well balanced.

VL Endpoint (copies/mL)	EFV/FTC/TDF	SBR	Difference EFV/FTC/TDF – SBR (95% CI)
less than 200 by TLOVR	89%	88%	1.1% (–6.7%, 8.8%)
less than 50 by TLOVR	87%	85%	2.6% (–5.9%, 11.1%)
less than 50 by LOCF	94%	97%	–3.3% (–8.3%, 2.7%)

At 48 weeks, EFV/FTC/TDF was non-inferior to SBR. Similar virologic responses were also observed between arms when analyzed by PI and NNRTI strata. Overall discontinuation rates for EFV/FTC/TDF vs. SBR were 11% vs. 12% (AE 5% vs. 1%; withdrawal of consent 2% vs. 7%). Overall, more psychiatric and/or nervous system symptoms were reported for EFV/FTC/TDF vs. SBR (dizziness 12% vs. 2%, abnormal dreams 7% vs. 0%, depression 8% vs. 4%); these occurred early, were generally transient, mild, and more common with prior PI-based ART. At 48 weeks, estimated GFR (MDRD) was unchanged from baseline.
CONCLUSION: High and comparable rates of virological suppression were maintained with EFV/FTC/TDF vs. SBR, regardless of type of previous ART. The grade/frequency of AEs reported for patients switched to EFV/FTC/TDF was consistent with previous studies.

P139
REAL-LIFE EFFECTIVENESS AND SAFETY OF LOPINAVIR/RITONAVIR IN HIV-INFECTED ADULTS WHO EXPERIENCED PRIOR DIFFERENT ANTI-RETROVIRAL TREATMENTS

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The purpose of the study was to assess virologic and immunologic effectiveness of lopinavir/ritonavir in HIV-infected adults who are anti-retroviral (ARV) naïve, protease inhibitor (PI) naïve or PI-experienced but naïve to lopinavir/ritonavir.
METHODS: This is an ongoing 96-week, observational, open-label, multicenter study. Patients were prescribed the standard dose of lopinavir/ritonavir (400mg/100mg) twice a day. Other ARV medications were prescribed at the discretion of the physician according to usual clinical practice.
RESULTS: Of the 142 patients enrolled, 47.2% were ARV-naïve, 19.0% were PI-naïve and 31.7% were PI-experienced but LPV/r-naïve. The mean (SD) age was 44.6 (9.5) years, 86.6% were male and 76.8% were Caucasian. The mean (SD) duration of HIV was 4.3 (0.7) years. Of the 35 (25.6%)

patients discontinued, 13 withdrew due to adverse event (AE). The virologic results after 48 weeks of treatment are available for 106 patients (53 ARV-naive; 19 PI-naïve; 34 PI-non-naive). There were 34 (64.2%) ARV-naïve, 14 (73.7%) PI-naïve, and 22 (64.7%) PI-experienced patients with HIV-RNA viral load <50 copies/mL after 48 weeks of treatment. There were 116 patients included in the immunologic analyses. CD4 cell counts at 48 weeks were estimated by linear regression. Mean (SD) change in absolute CD4 cell counts between baseline and 48 weeks was 196.9 (52.0) (p <0.001) in ARV-naïve, 110.8 (52.8) (p <0.001) in PI-naïve and 13.0 (78.0) (p=0.513) in PI-experienced patients. Of the 142 patients enrolled, none developed >6 protease-resistance mutations. There were 171 AEs probably/possibly related to lopinavir/ritonavir reported by 70 out of 142 patients, 29 ARV-naïve, 16 PI-naïve and 25 PI-experienced patients. Hypercholesterolemia was reported by 1 ARV-naïve and 1 PI-experienced patient who were not receiving lipid-lowering agents. Of the 17 serious AEs reported by 3 ARV-naïve and 4 PI-experienced patients, 12 were probably not/not related to study drug and none led to discontinuation.
After 48 weeks of treatment in a clinical setting, lopinavir/ritonavir is effective in achieving virologic control and immunologic improvement in ARV-naïve, PI-naïve or PI-experienced patients, with more significant immunologic benefit in ARV and PI-naïve patients.

P140
OUTCOMES OF ANTIRETROVIRAL THERAPY WITH TENOFOVIR PLUS LAMIVUDINE OR EMTRICITABINE AND NEVIRAPINE

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BACKGROUND: Recent reports have suggested an increased risk of virologic failure in antiretroviral (ARV) naïve patients initiated on tenofovir (TDF), emtricitabine (FTC) or lamivudine (3TC), and nevirapine (NVP). Reported risk factors include high viral loads and low CD4+ cell counts at baseline. The purpose of this study was to evaluate virologic outcomes in both antiretroviral (ARV) naïve and experienced patients treated with TDF, FTC or 3TC, and NVP.
METHODS: A retrospective analysis of patients who received NVP, FTC or 3TC, and TDF for > 3 months. Patients were identified using the Northern Alberta HIV Program database. Demographic data, treatment history, immuno-virologic data and resistance testing results were collected from medical charts. Virologic failure was defined as < 2 log10 decrease in viral load at 3 months, 1 log10 viral load increase from baseline, or 2 successive viral loads > 50 copies/mL after achieving an undetectable viral load.
RESULTS: Twenty-one subjects were included; 11 were ARV-experienced and 10 were ARV-naïve. Overall 7 patients experienced virologic failure (6 of whom were ARV-naïve). Of the 6 ARV-naïve patients who failed, 5 had baseline viral loads > 100 000 copies/mL and all 6 had baseline CD4+ cell counts < 150 cells/μL. Of the 11 ARV-experienced patients, 9 were virologically suppressed prior to the switch; 1 of these 9 patients experienced failure. Genotype resistance mutations upon failure included K65R (5/7), M184V (3/7), and ≥ 1 NNRTI mutation in 7/7 patients.
CONCLUSION: The rate of virologic failure was high (60%) among ARV-naïve patients initiated on TDF, FTC or 3TC, and NVP. Possible risk factors for failure included higher baseline viral loads and lower CD4 cell counts. This combination should be used cautiously, particularly in patients with higher baseline viral loads, until data supporting its use becomes available.

P141
LONG-TERM EFFICACY AND SAFETY OF ABACAVIR/LAMIVUDINE (ABC/3TC) WITH FOSAMPRENAVIR + RITONAVIR (FPV/R) VERSUS LOPINAVIR/RITONAVIR (LPV/R) OVER 144 WEEKS

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BACKGROUND: The KLEAN study demonstrated efficacy and safety of ABC/3TC with FPV/r vs LPV/r over 96 weeks. Efficacy and safety beyond 96 weeks has not previously been compared.
METHODS: This is the study 144 week planned analysis. Naïve subjects were randomized to FPV/r (700/100mg) BID or LPV/r BID, with ABC/3TC QD. Subjects with VL <400c/mL at Week 48 could continue to 144 weeks. Protocol-defined virologic failure (VF) was confirmed as ≥400c/mL.
RESULTS: Of 878 treated subjects, 196 (22%) participated in the extension. Extension subjects (ITT population) were demographically similar both to original study and between arms: median age 38 yrs; 78% male; 76% white/Caucasian; 12% CDC Class C; median baseline VL 5.0 log10 c/mL; CD4+ count 203 cells/mm^3.

At 144 weeks:	ABC/3TC/ FPV/r N=105	ABC/3TC/ LPV/r N=91
<400c/mL [TLOVR];n(%)	87(83%)	64(70%)
<50c/mL [TLOVR];n(%)	77(73%)	55 (60%)
<50c/mL [TLOVR] in baseline subjects ≥100Kc/mL;n/N(%)	44/60(73%)	26/43 (60%)
Median Δ CD4+ (cells/mm^3) from baseline (Q1-Q3)	300 (236-433)	335(225-444)
Any Drug-Related Grade 2-4 AEs;n(%)	44/104(42%)	25/92(27%)
Any Drug-Related Grade 3-4 AEs;n(%)	24/104(24%)	21/92(23%)
Study Discontinuations due to AEs;n(%)	5/104(5%)	3/92(3%)
Median Δ total fasting cholesterol (mg/dL) from baseline(Q1-Q3)	48(27-68)	51.5(21.5-84)
VF during extension phase(Weeks 96-144)	1/105(1%)	2/91(2%)

AEs reported (Baseline through Week 144); most common treatment-related events were diarrhea, nausea, upper abdominal pain, and drug hypersensitivity. The two VFs (LPV/r arm) had one treatment-emergent, protease-associated mutation each; E35D/G and A71A/V, the FPV/r VF was not able to be determined.
CONCLUSION: The KLEAN extension confirms durable viral suppression of FPV/r and LPV/r when used in combination with ABC/3TC over 144 weeks. Only one subject failed virologically after Week 96 (LPV/r arm), no additional protease resistance was detected in the extension phase. When FPV/r and LPV/r were used in combination with ABC/3TC, both regimens were safe and generally well tolerated over 144 weeks.

P142
THE SAFETY AND EFFICACY OF TENOFOVIR DF (TDF) IN COMBINATION WITH LAMIVUDINE (3TC) AND EFAVIRENZ (EFV) IN ANTIRETROVIRAL-NAÏVE PATIENTS THROUGH SEVEN YEARS

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INTRODUCTION: Study 903 is a Phase III trial with a 3 year, double-blind (DB) phase comparing TDF to d4T in combination with 3TC and EFV. In the study, TDF was associated with durable efficacy, better lipid profiles and less lipodystrophy. Study 903E is the ongoing open-label (OL) extension evaluating up to 10 year safety and efficacy of a once-daily TDF+3TC+EFV regimen.
METHODS: All patients in Argentina, Brazil, and the Dominican Republic who completed the double-blind phase were eligible to roll over to Study 903E and receive a once-daily regimen of open-label TDF+3TC+EFV.
RESULTS: 86 patients (62% male, 70% white, mean age 33 yrs) originally randomized to TDF continued treatment in the OL extension. At DB baseline (BL), mean HIV RNA=4.9 log10 c/mL and mean CD4 count=299 cells/mm3. At year 7, 81% (M=F) had HIV RNA <400 c/mL and 80% (M=F) had HIV RNA <50 c/mL; mean CD4 cell increase from BL=459 cells/mm3. One patient discontinued study due to adverse event (elevated amylase/lipase) and 4 due to virologic failure. No patient developed K65R mutation. No patient discontinued due to renal adverse events. Mean change from BL in glomerular filtration rate (GFR) by Cockcroft-Gault was +1 mL/min. Decreases in spine and hip bone mineral density (BMD) by dual energy x-ray absorptiometry were seen in the first year and remained stable (mean % change from BL at year 7 in BMD was –1.5% in spine and –2.6% in hip). No patient sustained pathologic fractures. Median limb fat was 6.7 kg at year 2 and increased to 8.0 kg at year 7.

CONCLUSIONS: Through 7 years of therapy, the once-daily regimen of TDF+3TC+EFV demonstrated sustained antiretroviral activity with continued immunologic recovery in antiretroviral-naïve patients and was not associated with limb fat loss or progressive bone loss, nor was it associated with declines in estimated GFR.

P143
EFFECTIVENESS AND SAFETY DATA FROM THE CANADIAN ETRAVIRINE EARLY ACCESS PROGRAM (EAP) TMC125-C214

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BACKGROUND: Etravirine (ETR; formerly TMC125) is an effective new NNRTI demonstrating favourable tolerability in treatment experienced HIV patients. Over 8500 patients across 40 countries have been enrolled in the TMC125-C214EAP, a study designed to provide early access of etravirine to HIV-positive patients who have failed multiple antiretroviral regimens. For this ongoing study, we currently report results from Canadian patients who have reached week 24 or discontinued at time of data export.
METHODS: HIV-1 infected patients with triple- or double-class experience with primary NNRTI resistance were enrolled. Patients were dosed with etravirine 200 mg b.i.d. as a component of their new antiretroviral regimen. Plasma viral loads and CD4 counts obtained by local laboratories were collected over the treatment period. The pre-specified primary intention-to-treat analysis examined the proportion of patients achieving complete virological suppression (plasma VL <50 HIV RNA copies/mL) at week 24.
FINDINGS: At the time of this analysis, the study population included 238 patients (median baseline VL 4.37 log10c/mL, median CD4 count 200 cells/mm^3). After 24 weeks of treatment, 79% of the overall patients achieved virological suppression (<50 copies/mL) with a median reduction in VL of –2.61 log10c/mL. The most frequently used novel antiretroviral agents in the background were darunavir/ritonavir (DRV/r) 74%, raltegravir (RAL) 50% and maraviroc (MVC) 4%. The percentage of patients with HIV RNA suppressed <50 copies/mL at week 24 according to background regimen were: ETR+DRV/r+RAL (73/82) 89%, ETR+DRV/r (53/69) 77%, ETR+RAL (10/17) 59%, ETR+Other Combinations (52/70) 74%. The median CD4 count increase from baseline was 70 cells/mm^3. Review of safety data in this EAP indicated that etravirine was well tolerated and discontinuations due to adverse events occurred in 4.6%.
CONCLUSION: Consistent with the clinical trials, patients treated with etravirine via the Canadian EAP were observed to have favourable virological, immunologic and safety responses irrespective of background ARV regimen.

P144
RCT OF VALPROIC ACID TO PURGE HIV FROM RESTING CD4+ MEMORY CELLS: DESIGN, ANALYSIS AND STUDY PROGRESS

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BACKGROUND: In HAART-treated patients with plasma viremia below the limit of detection, the persistence of replication-competent virus, in resting CD4+ memory cells has emerged as the major obstacle to eradication of HIV. Recent in vitro data have demonstrated that valproic acid (VPA), a potent HDAC inhibitor, can strongly induce HIV transcription, allowing outgrowth of latent HIV in resting CD4+ cells without enhancing new infection or activating CD4+ cells, in treated patients with undetectable viral load. VPA could potentially reduce the reservoir of chronically HIV-infected cells.
OBJECTIVE: To assess the effect of VPA on HIV reservoirs measured by the frequency of resting CD4+ memory cells carrying HIV proviral DNA in peripheral blood of aviremic chronically HIV-infected patients.
DESIGN: Subjects with CD4+ cell count greater than or equal to 200 cells/ml and viral load <50 copies/ml for at least the previous 12 months on HAART were randomized to receive either: VPA plus HAART for 16 weeks before switching to HAART alone for 32 weeks; or to HAART alone for 16 weeks followed by VPA plus HAART for 32 weeks. The unequal time periods on each treatment helps overcome the problem of carryover effects. Assuming a 2-sided test at significance level of 0.05 and a 0.5 correlation between baseline and end-of-period measure, 20 subjects completing protocol in each group has a power of 94% power for detecting a 0.4 log difference.
RESULTS: 56 patients (median baseline CD4=537) were randomized at 7 sites in just over a year and study follow-up is completed. Of the 56 patients, 12 failed to complete the study protocol. Eight patients discontinued from study because of adverse events, two of them serious. Primary laboratory outcomes are currently being assessed.
CONCLUSIONS: Rapid recruitment for trials of novel agents remains feasible. Valproic acid is a relatively safe treatment for HIV+ patients.

P145
CD4 COUNT AND PLASMA VIRAL LOAD OUTCOMES IN OPTIMA: A RANDOMIZED CONTROL TRIAL OF ANTIRETROVIRAL TREATMENT INTERRUPTION OR INTENSIFICATION IN ADVANCED MULTI-DRUG RESISTANT HIV INFECTION WITH POOR RETREATMENT OPTIONS

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BACKGROUND: OPTIMA is a Canada/US/UK tri-national randomized, control clinical management trial that assessed the effect of two antiretroviral treatment (ART) strategies in patients with advanced HIV disease, multi-drug resistance and poor retreatment options. Studies of treatment interruption have included laboratory markers of HIV infection such as CD4 count as outcomes, whereas OPTIMA examined clinical and laboratory outcomes separately. The focus of this presentation is on the laboratory outcomes and their comparison to previous studies.
METHODS: Patients with MDR-HIV and limited retreatment options, by susceptibility testing and with > 2 ART failures, viral load (VL) >2,500 copies/mL and on ART with CD4 < 300/mm^3, were factorial-randomized to (a) a 3-month ART interruption vs. continuation, and to (b) mega-ART (greater than or equal to 5 drugs) vs. standard ART (less than or equal to 4 drugs). Retreatment was selected by genotypic susceptibility profile and drug treatment history.
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/mm^3; mean log10 VL was 4.71 copies/ml. An analysis of CD4 and VL as outcomes showed transient superiority of continuous ART compared to treatment interruption at short intervals (3 and 6 months) but no difference between treatments at and beyond one year. There was no difference in CD4 and VL between mega-ART and standard ART at any time.
CONCLUSIONS: The lack of difference in response to mega-ART and standard-ART may be explained by the small difference in activity between standard- and mega-ART in MDR-HIV, disproportionate non-adherence to mega-ART or other post-randomisation differences. Initial response of laboratory markers to treatment interruption corroborate previous studies, but no long-term difference was identified in this largest and longest trial of its kind.

P146
HAS MODERN ANTIRETROVIRAL THERAPY INFLUENCED THE REASONS FOR SWITCHING OR STOPPING THE INITIAL ANTIRETROVIRAL REGIMEN IN TREATMENT-NAIVE PATIENTS?

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OBJECTIVE: Modern antiretroviral therapy (ART) is considered safer and easier to take than older regimens. We compared the frequency and reasons for change of the initial antiretroviral regimen according to time period in ART-naive patients initiating therapy between 2002 to 2006.

METHODS: Antiretroviral-naive patients ≥19 years attending an HIV-focused ambulatory pharmacy were identified through prescription records and included if they initiated therapy between 01-Jan-2002 and 30-Jun-2006. Trained pharmacists abstracted clinical records using standardized forms to record reason(s) for the first change in ART occurring within 2 years after initiation. ART change was defined as a gap in therapy >60 days or a change of ≥1 drug. Reasons for ART change were defined *a priori* and the primary reason was independently classified by two investigators, with disagreements resolved by consensus. Cases were categorized by regimen start date as Period 1 (01-Jan-2002 to 31-Dec-2004) or Period 2 (01-Jan-2005 to 30-Jun-2006). Period differences were determined by Chi-Square test.
RESULTS: 611 cases were included. Baseline age, sex and CD4 were similar by period. Period 2 had greater use of atazanavir/ritonavir, tenofovir, and abacavir, and decreased use of lopinavir/ritonavir, nevirapine, zidovudine, stavudine and didanosine versus Period 1 ($p < 0.05$). Period 2 had significantly fewer regimen stops or changes at 2 year follow-up, due to fewer adverse drug reactions and patient-initiated discontinuations. Changes for treatment failure were rare, with no period difference.
CONCLUSION: Reasons for initial ART regimen change parallel changes in ART prescribing over time and suggest fewer adverse reactions and adherence difficulties with modern regimens.

Outcome at 2 Year Follow-up	Period 1: 2002-2004 Total n=389 n (%)	Period 2: 2005-2006 Total n=222 n (%)	p value
Regimen continues unchanged	126 (32%)	110 (49%)	0.001
Lost to follow-up	8 (2%)	6 (3%)	0.8
Regimen stop or change	255 (66%)	106 (48%)	0.001
Reason for stop or change			
Adverse drug reaction	138 (35%)	52 (23%)	0.003
Treatment failure	14 (4%)	6 (3%)	0.7
Simplification	13 (3%)	13 (6%)	0.2
Patient-initiated discontinuation	38 (10%)	10 (5%)	0.03
Other reason	28 (7%)	10 (5%)	0.2
Unspecified	18 (5%)	8 (4%)	0.7
Died	6 (2%)	7 (3%)	0.3

P147
DURATION OF INITIAL ANTIRETROVIRAL THERAPY WITH CONTEMPORARY REGIMENS IN TREATMENT-NAIVE PATIENTS

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OBJECTIVE: Late 2004 saw changes in HIV treatment guidelines and increased availability of new antiretroviral drugs and once-daily dosing options. We examined the durability of initial antiretroviral therapy (ART) according to time period, dosing frequency, and regimen in ART-naïve patients initiating therapy between 2002 and 2006.
METHODS: ART-naive patients ≥19 years attending an HIV-focused ambulatory pharmacy were identified through a prescription database. ART regimen and start/change dates were verified in clinical records. Patients were followed for 2 years or until first therapy change, defined as a treatment gap >60 days or change of ≥1 drug.
Differences in initial regimen durability were examined by start date in Period 1 (01-Jan-2002 to 31-Dec-2004) versus Period 2 (01-Jan-2005 to 30-Jun-2006), once versus twice-daily dosing, by ART regimen and individual drugs. The probability of therapy change was estimated by the Kaplan-Meier method, with patients censored at 2 years, death, or loss to follow-up. Differences between groups were determined by Log Rank test.
RESULTS: 714 patients were identified and 610 included. Baseline age, sex and CD4 were similar in both periods. Period 2 had greater use of once-daily regimens, atazanavir/ritonavir, tenofovir, and abacavir, and decreased use of lopinavir/ritonavir, nevirapine, zidovudine, stavudine and didanosine versus Period 1 ($p < 0.05$). Significantly longer regimen duration was noted with ART initiation in Period 2, with once-daily regimens, or with regimens containing atazanavir/ritonavir (versus lopinavir/ritonavir) or with abacavir or tenofovir (versus zidovudine, stavudine and didanosine); see Table.
CONCLUSION: Increases in initial ART regimen durability parallel changes in ART prescribing over time.

Kaplan-Meier Analysis	Regimen change at 2 years, n (%)	Median (IQR) months to change*	Log rank p-value
By start date in period 1 or 2 (n=610)			0.001
Period 1: 2002-2004	249 /389 (64)	13.4 (10.8 – 15.4)	
Period 2: 2004-June 2006	98 /221 (44)	NA	
By dosing frequency (n=610)			0.001
once-daily	95 /238 (40)	NA	
twice-daily	252 /372 (68)	11.7 (9.7 – 13.6)	
By regimen type (n=577)			0.79
PI /ritonavir + 2N(t)RTI	212 /365 (58)	17.6 (13.8 – 21.2)	
NNRTI + 2N(t)RTI	115 /212 (54)	13.2 (8.4 – NA)	
By individual PI (n=341)			0.0001
atazanavir /ritonavir	74 /175 (42)	NA	
lopinavir /ritonavir	119 /166 (72)	12.7 (10.8 – 13.8)	
By individual NNRTI (n=212)			0.053
efavirenz	31 /66 (47)	NA	
nevirapine	84 /146 (58)	9.2 (5.7 – NA)	
By N(t)RTI combination (n=577)			0.0001
tenofovir /lamivudine or emtricitabine	78 /199 (39)	NA	
abacavir /lamivudine	35 /75 (47)	NA	
zidovudine /lamivudine	84 /126 (67)	7.2 (4.0 – 12.9)	
stavudine /lamivudine	96 /129 (74)	11.6 (9.5 – 13.8)	
didanosine /any other NRTI	34 /48 (71)	8.7 (4.5 – 18.5)	

**Median months to change NA if less than 50% changed by 2 years. PI, protease inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; N(t)RTI, nucleoside/ nucleotide reverse transcriptase inhibitor*

P148
DURABLE EFFICACY AND SAFETY OF ETRAVIRINE (ETR; TMC125) IN TREATMENT-EXPERIENCED, HIV-1-INFECTED PATIENTS: POOLED WEEK 96 RESULTS FROM THE PHASE III DUET-1 AND DUET-2 TRIALS

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BACKGROUND: The NNRTI ETR has shown durable and superior clinical efficacy over placebo, and tolerability similar to placebo, in treatment-experienced patients in the DUET trials. Pooled 96-week results are presented.
METHODS: Patients were randomized to receive 200mg ETR or placebo bid plus a background regimen (BR) of darunavir/ritonavir, investigator-selected NRTI(s) ± enfuvirtide (ENF). The primary endpoint was the proportion of patients with confirmed viral load (VL) <50 copies/mL. Safety/tolerability were also assessed.
RESULTS: 599 patients received ETR and 604 placebo. There was only a 3% decrease in the proportion of ETR patients achieving VL <50 copies/mL from Week 48 to 96 (60% to 57%), and 91% of ETR patients maintained their response from Week 48 to 96. SAEs (26% vs 26%), grade 3/4 AEs (41% vs 37%) and AEs leading to discontinuation (9% vs 6%) with ETR were comparable to placebo. As expected, incidence of rash did not change significantly from Week 48 (19% for ETR+BR) to Week 96 (21% for ETR+BR vs 12% for placebo+BR, $p < 0.0001$). The frequency of grade 3/4 neuropsychiatric (1% vs 3%) and hepatic (4% vs 3%) AEs was comparable between groups.
CONCLUSIONS: Durable and statistically superior efficacy was provided by ETR vs placebo through 96 weeks in the DUET trials. In ETR patients, the difference in VL <50 copies/mL between Weeks 48 and 96 was only 3%, and 91% maintained undetectable VL to Week 96. The safety profile of ETR remained comparable to placebo, excluding rash which was slightly higher with ETR but occurred early.

	Pooled findings from DUET at Week 48		Pooled findings from DUET at Week 96		
	ETR + BR (N=599)	Placebo + BR (N=604)	ETR + BR (N=599)	Placebo + BR (N=604)	Difference vs Placebo at 96 weeks (95% CI)
VL less than 50 copies/mL (%)					
Overall	60	39	57	36	21 (16, 27)[a] p < 0.0001[c]
ENF de novo (n=153 for ETR, 159 for Placebo)	69	58	67	55	13 (2, 23)[a] p=0.0287[d]
ENF re-used/ not used (n=446 for ETR, 445 for Placebo)	57	33	54	30	24 (18, 31)[a] p < 0.0001[d]
Mean change in VL, log10 copies/mL	–2.25	–1.49	–2.16	–1.42	–0.63 (–0.82, –0.45)[b] p < 0.0001[e]
Mean change in CD4 cell count, cells/ mm^3	98	73	128	86	39 (21, 56)[b] p < 0.0001[e]

CIs around [a]observed difference in response rates, [b]LSmeans estimate from ANCOVA model p values from [c]logistic regression model, [d]CMH-test, [e]ANCOVA model, in each case controlling for stratification factors

P149
ATAZANAVIR/RITONAVIR (ATV/R) + ABACAVIR/ LAMIVUDINE (ABC/3TC) IN ANTIRETROVIRAL (ART)-NAIVE HIV-1 INFECTED HLA-B*5701 NEGATIVE SUBJECTS DEMONSTRATES EFFICACY AND SAFETY: THE ARIES TRIAL

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BACKGROUND: Results from ACTG A5202 have raised questions of a higher rate of virologic failure (VF) in subjects on ABC/3TC with a baseline (BL) HIV-1 RNA (vRNA) ≥100,000 c/mL. ARIES was enrolled concurrently with and utilizes the same regimen as one arm of A5202.

METHODS: Subjects with screening vRNA ≥1000 c/mL and any CD4+ enrolled in this open-label study of ATV/r + ABC/3TC followed by randomization (1:1) at Week (Wk) 36 to maintain or drop RTV. Study-defined VF was failure to achieve vRNA <400 c/mL by Wk 30 or confirmed rebound ≥400 c/mL. Additional analysis of A5202 primary efficacy endpoint (vRNA ≥1000 c/mL at/after Wk 16 and before Wk 24 or confirmed rebound ≥200 c/mL at/after Wk 24) was conducted.

RESULTS: 515 subjects [ITT(E)] included in this non-comparative pre-planned analysis: median age 38; 83% male; 62% white; 13% CDC Class C; vRNA 5.08 log10 c/mL; CD4+ 199 cells/mm3. Drug-related Grade 2-4 clinical AEs were reported in 142 (28%), most commonly hyperbilirubinemia (13%) and diarrhea (4%).

Week 36 Results, n/N (%)	ABC/3TC+ATV/r N=515
vRNA<50/200 c/mL, TLOVR	410/515 (80%)/ 422/515 (82%)
BL vRNA<100,000 c/mL	190/227 (84%)/ 193/227 (85%)
BL vRNA≥100,000 c/mL	220/288 (76%)/ 229/288 (80%)
Utilizing A5202 primary efficacy endpoint	96.5%
BL vRNA<100,000 c/mL	98.1%
BL vRNA≥100,000 c/mL	95.1%
VF	15/515 (3%)
CD4+ cell count (ΔBL)	+171 cells/mm^3

Of 15 cases of VF, 5 and 10 occurred in the <100,000 c/mL and ≥100,000 c/mL strata, respectively.

CONCLUSIONS: The combination of ABC/3TC + ATV/r demonstrated potent antiviral activity through 36 weeks of follow-up in this population of ART-naïve subjects. Based on the ACTG A5202 endpoint, similar virologic success rates were achieved irrespective of VL strata.

Clinical Sciences – Co-infections (Including HCV, HBV, HPV, Syphilis, TB)

P150
EFFICACY OF SHORTER DURATION (SD) OF HEPATITIS C VIRUS (HCV) TREATMENT IN ILLICIT DRUG USERS (IDUS)

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BACKGROUND: The standard treatment (ST) of HCV treatment is 24-48 weeks, based on genotype. New Canadian guidelines allow for a SD to be considered, especially in the absence of predictors of a poor response and in the presence of a rapid virologic response (RVR). With this in mind, we have compared the efficacy of SD vs. ST of HCV treatment in IDUs enrolled in an observational modified directly observed therapy (DOT) cohort.

METHODS: Patients treated in Pender Community Center HCV program were considered for enrolment in this study. According to contemporary Provincial guidelines, treatment was initiated using weekly pegylated interferon administered as DOT along with Ribavirin dispensed weekly. Adherence and toxicity were monitored weekly, efficacy was monitored by the presence of HCV RNA during treatment, end of treatment (ETR) and 6 months later. Patients completing the ST constituted the control group, while those discontinuing early were the non-randomized experimental group.

RESULTS: Among the 43 patients who received treatment, 26 (61%) achieved SVR (22 male, 20 geno 2/3), 22/43 received ST and 21/43 received SD. In the latter group, success rate was 11/21 (52%) and was higher in those with genotype 2/3 (9/12, 75% vs. 2/9, 22% for geno 1), 5/7 who had RVR achieved SVR and 4/4 who had no RVR didn't achieve SVR. In contrast, those completed ST, success rate was 15/22 (68%) and was Higher in geno 2/3 (11/14, 78%) vs geno 1 (4/8, 50%). Median duration of therapy in the SD was 17 weeks (range 1 – 46). Main reasons for early discontinuation were toxicity (5), lack of virologic response (6), addiction-related issues (7) others (3).

CONCLUSION: Shorter duration of treatment of HCV can be successful in IDUs, particularly if infected with genotype 2/3 and an RVR can be documented. SD of therapy cannot yet be recommended as a standard of care, these data may help inform therapeutic decisions in the face of inevitable premature discontinuation of therapy.

P151
RETROSPECTIVE REVIEW OF RESPONSE TO HEPATITIS A VACCINE IN PERSONS WITH HIV

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Hepatitis A (HAV) is a common infection in the general population. In HIV infected persons it can be more severe and cause significant morbidity and even mortality. In 2005, in an approach to minimize the risk of HAV infection, the Southern Alberta Clinic instituted an HAV vaccination program for all patients who were HAV antibody negative, and whose CD4 >200mm3. The efficacy of the HAV vaccine in a HAART treated population has been poorly described.

A retrospective database review and individual chart review was conducted on all patients who met the eligibility criteria and who received full HAV vaccination using Havrix (GSK, Canada).

241 eligible patients were given 2 doses of HAV vaccine (1440 ELISA units/ml) per IM injection. No complications associated with vaccination were seen. Antibody levels were measured within 12 months of the second dose. 228 patients (94.6%) had developed the antibody and 13 (5.4%) had no serological response. Gender, CD4, use of ART, the presence of HCV, and

allergy to abacavir did not appear to influence immune response. However active HIV replication appeared to be associated with a lower response rate to HAV vaccine. Only 4 of the non-responder patients (31%) had undetectable viral loads while the remaining 9 patients had viral loads ranging from 280 - 480,000 copies/ml when immunized. In contrast, 164 of the responder patients (72%) had undetectable viral loads ($p < 0.05$).
HAV vaccination can be given safely and it provides good immunity in HIV infected persons with good CD4 counts. However for those with active HIV replication the response may be sub-optimal. Further research to determine the mechanism of interference and confirmation of who is less likely to respond should be evaluated in larger datasets.

P152
MONO VERSUS DUAL HEPATITIS B ANTIVIRAL THERAPY IN HIV-HBV CO-INFECTION

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INTRODUCTION: In HBV-HIV co-infection, evidence for enhanced efficacy of dual over mono HBV oral therapy is limited. We assessed the efficacy of HBV therapies (no therapy versus monotherapy versus dual therapy) in HIV-HBV co-infected treatment-naïve patients and characterized treatment response of HBV dual therapy in treatment-experienced patients.
METHODS: A retrospective review of HIV-HBV co-infected patients seen at The Ottawa Hospital Immunodeficiency Clinic from January 1996 to December 2008 was conducted. Treatment failure was defined as ALT flares twice the upper limit normal if ALT was within normal limits at baseline or doubling if abnormal at baseline. Virological failure was defined as loss of HBV DNA suppression (>400 copies/mL) or doubling of the HBV DNA nadir.
RESULTS: 50 treatment-naive [9=not treated, 33=lamivudine-treated, 8=dual therapy (3TC/FTC + tenofovir)] and 20 treatment-experienced patients were assessed. Median (IQR) follow up was 27 months (11-63). No elevations in ALT or HBV DNA were observed in the dual therapy compared to 6/33 and 11/21 in the monotherapy group and 3/9 and 0/1 in the 'not treated' group. Survival analysis failed to reveal differences for ALT elevation ($p=0.136$) and virological failure ($p=0.658$). The incidence of ALT elevation and HBV DNA in the monotherapy group was lower than reported in the literature (6 and 17 per 100PY respectively). In treatment-experienced patients, tenofovir was added in 50% (10/20) for virological failure with subsequent HBV DNA suppression below 400 copies/mL.
CONCLUSIONS: Fewer than expected events occurred in our cohort limiting this analysis. No differences in outcomes were observed between groups. However, trends for benefit with dual versus HBV monotherapy were observed. Longer follow-up and the addition of patients to this cohort will further clarify the value of dual HBV therapy in this population.

P153
EXCESSIVE SHORT TERM MORTALITY AND CAUSES OF DEATH IN HIV AND HCV CO-INFECTION: THE IMPORTANCE OF LOSSES TO FOLLOW-UP

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BACKGROUND: Few studies have exhaustively examined causes of death in HIV-HCV co-infected patients where injection drug use (IDU) and other co-morbidities are common.
METHODS: HIV-HCV co-infected patients were enrolled prospectively from 2003-2007. Provincial vital statistics were used to determine precise causes of death in patients reported died or lost to follow-up (LTFU). Standardized mortality ratios (SMR) were calculated and multivariable logistic regression was used to examine factors associated with death.
RESULTS: 253 patients were followed for a median of 2.5 yrs; 17 (7%) were LTFU. A majority was male (81%) with median age 44 (19-68) yrs, CD4 338 cells/ul and HIV RNA, 1.76 log; 70% were receiving HAART. Rates of past incarceration (62%), current alcohol use (51%) and active IDU (37%) were high. In follow-up, 19 were reported to have died and 7/17 (41%) LTFU were discovered dead after querying provincial records (total deaths: 26 (10.3%)). The crude mortality rate when LTFU were considered alive was 3.1/100 p-yrs (95% CI, 1.9-4.9) increasing to 4.2/100 p-yrs (95% CI, 2.8 to 6.2) when deaths among LTFU were included. Considering all deaths, the SMR (95% CI) was 18.3 (12.5 to 26.9); 14.7 (9.6 to 22.6) for males and 24.6 (10.3 to 59.2) for females. Causes of death were determined in 25 (96%) and were: overdose (8), endstage liver disease (ESLD; 5); HIV/AIDS-related infections (4); non-AIDS malignancy, renal failure, trauma (2 each), CVD and infection (1 each). LTFU deaths were from cancer, ESLD and infections. Factors associated with death were (aHR, 95% CI): older age (1.07/yr, 1.02-1.12), homelessness (3.8, 1.05-13.9) and ESLD at baseline (2.5, 0.81-7.9).
CONCLUSIONS: We observed high short term mortality among HIV-HCV infected persons. Deaths were frequent among those LTFU and, if not accounted for, would have led to an underestimation of mortality rates and biased determination of causes of death.

P154
HCV TREATMENT RATES AND OUTCOMES AMONG HIV/HCV CO-INFECTED INDIVIDUALS MEETING TREATMENT GUIDELINES

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OBJECTIVES: We actively recalled and attempted to treat known HCV/HIV co-infected individuals with no prior known contraindications to treatment. Those who returned to clinic when recalled and found to be treatment eligible were characterized, and compared according to whether they received treatment or not. Treatment outcomes were also assessed.
METHODS: Retrospective study of patients enrolled at the John Reudy Immunodeficiency Clinic (IDC) in Vancouver. Analyses included descriptive summaries of patient demographic and clinical variables at baseline visit and post treatment (if applicable). Multivariate associations were assessed for several baseline factors between treated and non-treated groups.
RESULTS: A total of 130 recalled HCV/HIV co-infected individuals presented themselves for baseline assessment. Of those, 62 initiated treatment, 41 (66.1%) attained early virologic response (EVR), and 34 (54.8%) SVR (4 more pending). Treated individuals were more likely to be MSM ($p=0.003$), and not IDU ($p=0.001$), have higher baseline ALT ($p=0.02$), and normal hemoglobin ($p=0.003$). Genotype 2 or 3 trended towards being more likely to be treated than 1, 4, 5, and 6 ($p=0.06$). In treated individuals, ALT dropped significantly after treatment ($p<0.001$). Multivariate analysis indicated that MSM (odds ratio [OR] 3.13, 95% confidence interval [CI] 1.33, 7.37) and having normal hemoglobin levels (OR 4.77, 95% CI 1.43, 15.88) were predictors of entering treatment.
CONCLUSION: Despite being eligible for HCV treatment, only half of those recalled initiated treatment. Of those starting treatment, EVR and SVR results approximated expected values in this population. Of note, almost all of those treated appeared to benefit from decreased ALT values whether or not they had undetectable virus at the end of the study, providing additional reason to treat co-infected individuals for HCV.

P155
THE CANADIAN TREATMENT ACTION COUNCIL (CTAC): ADVOCACY FOR ACCESS TO SOLID ORGAN TRANSPLANTS FOR PLHIV OR CO-INFECTED WITH HEPATITIS AND A CANADIAN CENTRE OF EXCELLENCE FOR ORGAN TRANSPLANTATION

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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 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.

The Canadian Treatment Action Council (CTAC) 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.
CTAC continues to work on this issue: a White Paper with recommendations is being developed and there continues on-going discussions with various stakeholders.

P156
HIV-HCV CO-INFECTION: RISK OF DEVELOPMENT OF RESISTANCE-ASSOCIATED MUTATIONS TO NUCLEOSIDES AFTER EXPOSURE TO RIBAVIRIN

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BACKGROUND: Ribavirin is currently used as part of combined therapy for hepatitis C virus (HCV) infections but is also structurally similar to nucleoside reverse transcriptase inhibitors (NRTIs) used in HIV treatment. Since many HCV patients are also co-infected with HIV, there is concern regarding the development of HIV resistance to NRTIs as a result of ribavirin exposure.
OBJECTIVE: This retrospective study aimed to determine whether exposure to ribavirin in the HIV/HCV co-infected patient without simultaneous viral suppression causes the emergence of HIV mutations that allow for cross-resistance to NRTIs.
METHODS: Subjects included eleven adult HIV/HCV co-infected patients that had HIV positive viral loads before and during ribavirin exposure and that were not simultaneously exposed to highly active antiretroviral therapy (HAART) while using ribavirin. HIV genotyping was performed on patient blood samples with viral load >200 copies/mL taken periodically starting from baseline prior to ribavirin exposure until the end of ribavirin treatment. Baseline HIV reverse transcriptase gene mutations from codons 1-400 were compared to mutations observed during the period between start and end of ribavirin exposure. New mutations that appeared during therapy in more than one viral load and that remained present until end of treatment were marked as significant, "persisting" changes.
RESULTS: Ten cases of new, persisting mutations were found among six patients (35wt/I, 106wt/I, 123wt/E, 165wt/I, 178wt/L, 189wt/I, 277wt/K, 324wt/E, 344wt/D, 360wt/T). However, none of these mutations are known to be associated with NRTI resistance.
CONCLUSION: It may be safe to continue treating HIV/HCV co-infected patients with ribavirin as part of combined therapy for HCV infection without simultaneous use of HAART. Further retrospective and prospective, natural studies investigating the correlation between ribavirin exposure and HIV mutations are needed, particularly with the use of a larger sample size and subjects having had equivalent durations of ribavirin exposure.

P157
DETERMINANTS OF ENGAGEMENT IN CARE OF INNER CITY HCV-INFECTED INJECTION DRUG USERS

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OBJECTIVES: The majority of prevalent and incident cases of HCV infection in Canada occur in current and former injection drug users (IDUs). There is an urgent need to better characterize this population in terms of its demographics, knowledge base about their disease and willingness to enter into treatment, to better plan for the deployment of health care resources to accommodate their needs. We conducted a prospective survey of attendees of four inner city British Columbia clinics to address these issues.
METHODS: HCV-infected patients attending inner city clinics in Vancouver, Nanaimo and Victoria were identified for inclusion. Selected demographic information was collected, along with information about previous or current consideration for HCV treatment, as well as reasons for having ever sought or been offered treatment, or having refused (or been refused) treatment if considered.
RESULTS: A total of 296 patients (64% male, 21% First Nations, median age 46) were included. Key baseline characteristics included: Unstable housing (65%), active IDU (55%) and opiate substitution (55%). Of those not having sought treatment (n = 195), the main reasons were: Lack of information (27%), absence of symptoms (17%), perceived treatment toxicity (8%) and unstable drug use (7%). Of 108 individuals not accepting treatment once offered, the main reasons were concerns about side effects (16%), lack of interest (12%), absence of symptoms (10%) and unstable drug use (7%). Up to now, 26 patients have been treated, with the main reasons for exclusion from treatment being lack of interest (51%), genotype 1 or 4 requiring longer treatment (24%) and lack of reimbursement of medications (9%).
CONCLUSION: Lack of interest and information along with unstable drug use appear to be the main drivers limiting the uptake of HCV treatment in our inner cities. The establishment of peer-driven discussion groups led by HCV clinical and research staff will play an important role in making treatment more accessible, especially when delivered in concert with addiction treatment services, and with specific protocols to address treatment toxicities in a proactive manner.

Clinical Sciences – Complications of HAART

P158
MITOCHONDRIAL TOXICITY IN HIV PATIENTS MANIFESTING AS A SYNDROME RESEMBLING CHRONIC PROGRESSIVE EXTERNAL OPHTHALMOPLEGIA (CPEO)

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BACKGROUND: HIV and antiretrovirals can affect skeletal muscle. Although mitochondrial (mt) toxicity, muscle mtDNA depletion and myopathy have been described with HAART, mitochondrial syndromes such as CPEO have not been reported.
METHODS: Three HIV-infected patients (52-58 yrs) on long time NRTI-containing HAART (10-15 yrs) were referred for neurology assessment of a CPEO-like syndrome. Chart review and in one patient (#2) for whom quadriceps and levator (eyelid) muscle biopsies were obtained, mitochondrial enzyme analysis and mtDNA investigations were performed.
RESULTS: No patient had a family history of mitochondrial disease. All three presented with a complaint of progressive ptosis (eyelid drooping), and occasional diplopia (double vision). Examination revealed ptosis in all three and multidirectional ophthalmoparesis in two patients. Also, all had manifestations of HAART-induced mitochondrial toxicity, including lipodystrophy, hyperlactatemia and fatigue. One patient(#1) showed improvement of his ocular symptoms after withdrawing HAART for 3m, one(#2) did not despite substituting T20 for ddI, one(#3) was lost to follow-up. Patient #2's levator muscle revealed mitochondrial pathology but his quadriceps biopsy, including mt enzyme analysis, was unremarkable. Muscle genetic analyses detected a rare 3.9 kb mtDNA deletion (547-4443) that has been associated with CPEO.
CONCLUSIONS: These cases suggest that combined mitochondrial toxicity from HIV infection and antiretroviral therapy can occasionally produce syndromes resembling mitochondrial disorders which may improve by withdrawing the offending agent(s). It is unclear whether HIV infection and mitotoxic agents can produce the syndrome on their own or whether they may exacerbate and unmask previously present sub-clinical mitochondrial disease. Nevertheless, the incidence of this CPEO-like syndrome, a rare disease in the general population (the prevalence of all mitochondrial diseases combined is ~1/8500), seems high considering that our total patient population on HAART is ~4500. The observation of CPEO-like syndrome may increase as the number of aging HIV survivors with long-term HAART exposure rises.

P159
IS THE PHENOMENON KNOWN AS IRIS ACTUALLY A PERIOD OF IMMUNE SUPPRESSION?

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An Immune Reconstitution Inflammatory Syndrome (IRIS) occurs in roughly 15-25% of severely immunocompromised HIV+ patients initiating antiretroviral therapy. It is a period roughly 4 to 6 weeks after beginning

therapy when patients experience a paradoxical clinical worsening due to opportunistic pathogens despite increasing CD4 counts. While IRIS is well described, the pathogenesis underlying this phenomenon is mostly speculative. It is generally understood that IRIS results from an inflammatory response on the part of the recovering immune system to subclinical pathogens. We describe here a patient who experienced an IRIS due to mycobacterium tuberculosis. She had been successfully treated with standard therapy for TB 6 months earlier but refused antiretroviral therapy. At the time of relapse, the same strain of TB was cultured from her sputum but now showed resistance to rifampin. CD4 count was 8 and lymphocyte proliferation and gamma-interferon production in response to TB antigens were absent. Anti-tuberculosis therapy was initiated followed two weeks later by HAART. Sputum was culture negative within 4 weeks at which point CD4 count had increased to 69 and in vitro immune responses to TB antigens showed partial recovery. Six weeks following initiation of antiretrovirals, the patient experienced an IRIS and mycobacterium tuberculosis was again cultured from her sputum. CD4 count was 94. Interestingly, while gamma-interferon production in response to TB antigens was preserved, lymphocyte proliferation in response to PPD was significantly diminished.

Reduced lymphocyte proliferative response to TB antigen coincident with the reappearance of mycobacterium tuberculosis in this patient suggests IRIS may in fact be a period of partial immune suppression. Indeed, immune reconstitution may not be homogeneous and we hypothesize recovery of T regulatory cells may initially outpace T helper cells. If this were to occur, a diminished immune response may be expected and would explain why opportunistic pathogens re-emerge during an IRIS.

P160
DYSLIPIDEMIA ASSOCIATED WITH USE OF SPECIFIC ANTIRETROVIRAL DRUGS IN BRITISH COLUMBIA, CANADA

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BACKGROUND: Highly Active Antiretroviral Therapy (HAART) use has been associated with lipid abnormalities. Few studies have directly compared the incidence of dyslipidemias associated with the use of specific ART drugs in a programmatic setting.

METHODS: Data from ART-naïve individuals aged ≥ 18 years, who initiated HAART in the BC HIV Drug Treatment Program between 01/2000 and 06/2006 were analyzed. Participants had normal lipid profiles at baseline with at least one follow-up value. Outcomes assessed included the elevations in total cholesterol (TC), low-density lipoprotein (LDL) and/or triglycerides (TGs). Changes in TC were adjusted for increases solely due to HDL. Incidence rate ratios for lipid abnormalities were calculated based on person-years of exposure to each HAART drug. Multivariate logistic regression analysis was used to examine factors associated with LDL elevations with patients classified as never or ever been exposed to individual drugs.

RESULTS: Of 667 patients with available lipid values, 528 (79%) had baseline TC ≤ 5.2 mmol/ L. 135 (25.5%) started with a NNRTI and 393 (74.5%) with a PI-based regimen. When comparing PI/NNRTsI to atazanavir and NRTIs to lamivudine, subjects receiving lopinavir, saquinavir, indinavir or stavudine were at increased risk for elevations in TC, LDL and TGs. Nelfinavir and didanosine patients were also at increased risk for LDL and TG elevations. Use of nevirapine (AOR=2.67; 95% CI 1.07-6.68) or lopinavir (AOR=6.06; 95% CI 2.82-12.9), was associated with LDL elevations. Hepatitis C sero-positivity was inversely associated with LDL elevations (AOR=0.12; 95% CI 0.03-0.56). After a median of 21 months of further follow-up, lipid values normalized for 44% of those with TC elevations, 66% with LDL elevations and 45% with TG elevations.

CONCLUSION: Exposure to lopinavir, nevirapine and first generation PIs was associated with an increased risk of developing LDL elevations. Between 40-60% of abnormal lipid levels remained abnormal in follow-up.

P161
METABOLIC OUTCOMES FROM PROSPECTIVE, RANDOMIZED CLINICAL TRIALS OF TENOFOVIR DF (TDF)- COMPARED TO THYMIDINE ANALOG-CONTAINING EFAVIRENZ-BASED REGIMENS IN ANTIRETROVIRAL-NAÏVE PATIENTS

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INTRODUCTION: ACTG 5142 demonstrated a lower incidence of lipoatrophy among patients who received efavirenz (EFV) + lopinavir/ritonavir (LPV/r) or LPV/r plus 2 nucleoside reverse transcriptase inhibitors (NRTIs) compared to EFV+2 NRTIs. Lipoatrophy in the EFV or LPV/r + NRTI arms was predominantly seen in the stavudine (d4T) or zidovudine (ZDV)-containing regimens.

METHODS: We evaluated changes in limb fat (by DEXA) and fasting lipids in pts who initiated TDF-containing vs. thymidine analog-containing regimen (Control) in Studies 903 and 934, Phase III randomized, controlled trials comparing TDF vs d4T or ZDV in combination with EFV and 3TC or FTC. DEXA was performed at wks 96 and 144, and lipids were obtained at baseline (BL) and every 12 weeks. Logistic regression analysis was performed to assess factors potentially associated with development of lipoatrophy.

RESULTS: 1,111 pts (TDF: n=556; Control: n=555 [d4T=301; ZDV=254]) were enrolled. BL characteristics were similar between groups. Median BL fasting lipids were similar. Median limb fat at Wk 96 was 7.3 kg in TDF arm vs 4.8 kg in Control arm (p <0.001). Using logistic regression, treatment with a thymidine analog was the only factor predictive of lipoatrophy.

Week 144 Results	TDF	Control	p-value
Median Change from BL in Fasting Lipids (mg/dL)*			
TC	27	45	<0.001
HDL-D	10	8	0.12
LDL-D	12	21	<0.001
TC/HDL Ratio	-0.2	0.2	<0.001
Triglycerides	6	43	<0.001
Limb Fat by DEXA**			
Median Change from Wk 96 to 144 (grams)	140	–170	<0.001

**pts with data at both BL and wk144; **pts with data at both Wks 96 and 144*

CONCLUSIONS: Significantly lower increases in fasting total cholesterol, LDL and triglycerides were seen with TDF- vs. thymidine analog-containing EFV-based regimens through 144 wks. Median limb fat was higher in the TDF group; treatment with a thymidine analog was predictive of lipoatrophy.

Clinical Sciences – Immunotherapy

P162
A NURSING PERSPECTIVE OF APHERESIS PROCEDURES PERFORMED IN HIV-INFECTED SUBJECTS RECEIVING A MONOCYTES-DERIVED DENDRITIC CELL-BASED IMMUNOTHERAPY

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OBJECTIVES: Apheresis procedures constitute a key step in generating a dendritic cell (DC)-based immunotherapy by providing large quantities of a subset of white blood cells called monocytes. This cell therapy is a patient-specific immunotherapy (AGS-004) which consists of monocyte derived DC and RNA encoding autologous HIV antigens derived from the patient's own pre-ART plasma. Nurses in a large metropolitan teaching hospital, cell separator unit, have been involved with HIV-infected subjects enrolled in this DC-based immunotherapy study. This presentation will provide a description of the apheresis procedure data on the tolerance, safety as well

as practical information to further improve efficacy of the collection.
METHODS: Subjects recruited from multiple hospital and private clinics were enrolled in the CTN-239 study and undergo two apheresis procedures. The first is to generate the immunotherapy product and the second to assess immune responses following four intradermal injections. Apheresis procedures are performed using a COBE®Spectra™ machine. Prior to the procedure a medical and nursing bio-psychosocial assessment is performed. A CBC with differential is drawn to calibrate the autoPBSC setting on the machine. The total blood volume processed for each apheresis was not less than 10L at a flow rate of 65mL/min using ACD-A as anticoagulant.
RESULTS: 28 apheresis procedures were performed in 14 subjects. Each collection performed lasts 3 to 4 hours. Procedures were well tolerated with no serious side effects noted. However, 6 subjects experienced fatigue at the end of the collection. No procedure was interrupted due to medical or technical problems. An average of 23.1 doses/subject was manufactured from one apheresis collection.
CONCLUSIONS: The apheresis procedures were safe, well tolerated and yield a large quantity of monocytes to generate immunotherapy doses. The knowledge and expertise of the apheresis unit nursing staff are key elements for achieving high quality collections independent of subject variables.

P163
SAFETY AND FEASIBILITY OF A MULTICENTRE PHASE II TRIAL USING AUTOLOGOUS DENDRITIC CELL (DC) THERAPY TO CONTROL VIRAL REPLICATION FOLLOWING ART DISCONTINUATION (CTN#239)

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OBJECTIVES: In the phase I trial (CAN-HIV-001/CTN 219) we demonstrated that an immunotherapy (AGS-004) which consists of a monocyte derived dendritic cell (DC) and RNA encoding autologous HIV antigens (Gag, Nef, Rev, Vpr) derived from the patient's pre-ART plasma induced immunogenicity in most patients. Based on these results a trial (CTN 239) was designed to assess the proportion of patients having a persistent low viral load after a structured treatment interruption (STI).
METHODS: This multicentre phase 2 trial was designed to assess the safety and anti-viral activity of DC therapy (AGS-004) administered with ART and followed by a well controlled STI. Patients should be on their first ART with viral load (VL) < 50 copies/ml, CD4 > 450 cells/μL with a CD4 nadir > 200 cells/μL and without viral co-infections. The treatment regimen consists of 4 intradermal AGS-004 doses administered monthly in combination with ART followed by a STI of 12 weeks. Subjects may continue on a long-term AGS-004 booster administration of AGS-004 if VL remains < 10,000 copies/ml.
RESULTS: From 11 Canadian sites at hospital and private clinics, 25 subjects have registered. AGS-004 manufacturing by DC collection by leukapheresis and HIV RNA from pre-ART plasma has been successful for 16 subjects and successfully administered at 6 clinical sites. Few subjects experienced Grade 1 flu-like, GI symptoms, fatigue, and injection site reactions. No reports of clinical autoimmunity manifestations, or detrimental changes in CD4 cell counts or viral blip in response to AGS-004 treatment were observed. Of the 8 subjects on STI, none of them experienced acute infection syndrome, AIDS or non-AIDS events.
CONCLUSIONS: Data from this multicenter phase II trial provides evidence on the feasibility and safety of AGS-004, an autologous dendritic cell immune therapy for HIV-infected patients treated during ART and supports the safety of a well monitored STI.

Clinical Sciences – Issues in the Developing World and Vulnerable Populations

P164
ASSESSMENT OF PERCEIVED LEARNING NEEDS IN HIV PSYCHIATRY AMONGST PSYCHIATRISTS WORKING IN SUB-SAHARAN AFRICA: RESULTS FROM FOCUS GROUP DISCUSSIONS

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OBJECTIVES: To inform the design of relevant continuing medical education in HIV psychiatry, we conducted a mixed methods needs assessment examining the perceived learning needs of psychiatrists working in Sub-Saharan Africa.
METHODS: In part one, we used focus group discussions to investigate perceived learning needs, preferred learning methods and involvement in, and barriers to, participation in educational programming in HIV psychiatry.
RESULTS: Twenty nine psychiatrists (13 female), working in seven Sub-Saharan countries, participated in five focus groups conducted in 2007. Over and above limitations in human and financial resources, participants identified the stigmatization of psychiatry within medicine and the lack of integration of medical and psychiatric services, as being key barriers to feeling connected in the provision of care for HIV+ patients. Many participants identified that care systems have not identified active roles for psychiatrists in comprehensive HIV care, which has often led to non involvement in HIV training opportunities. In addition to identifying learning needs in content areas of HIV psychiatry, participants also identified a need for discussion opportunities of complex issues that arise in the care of HIV+ patients, including ethical, legal and advocacy issues. Participants identified a preference for case-based educational programming that promoted discussion and would strengthen collaborative relationships between African settings. Web based/internet learning was viewed as not practical by most participants due to resource constraints.
CONCLUSIONS: Educational programming in HIV psychiatry should include system level interventions that will facilitate the involvement of psychiatrists and promote discussion opportunities in complex medical-psychiatric interface issues.

P165
ONLINE ASSESSMENT OF EDUCATIONAL NEEDS IN HIV PSYCHIATRY AMONGST PSYCHIATRISTS WORKING IN SUBSAHARAN AFRICA

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OBJECTIVES: Psychiatrists play a key role in provision of comprehensive HIV care in developing countries. We conducted an online survey to understand psychiatrists' perceived learning needs in HIV psychiatry.
METHODS: We accrued a list of 604 psychiatrists in Sub-Saharan Africa. 469 successfully received the invitation to participate. The survey inquired about (i) demographic and professional information; (ii) perceptions of knowledge/skill levels and importance of furthering knowledge/skill level; (iii) preferences for educational programming; (iv)barriers to learning. 5 Case examples were employed to elucidate information about knowledge/skill level. Deficiencies in knowledge/skills domains were determined by calculating gap scores, defined as the difference between participants' perceived current and desired level of knowledge or skill in a selected domain.
RESULTS:

- 98 responses were received representing 10 countries.
- Work settings were: 58/98 (59.2%) academic setting, 39/98 (39.8%) general hospital.
- 60/93 (64.5%) reported adequate level of basic knowledge regarding HIV.
- 53/90 (58.9%) reported adequate skills in speaking to patients about HIV.
- Participants identified knowledge/skill gaps in the following areas:

drug-drug interactions, developing integrated medical-psychiatric system, mental health issues in orphans/HIV+ children, performing screening cognitive assessment, and legal issues around disclosure.
- Barriers to learning include: lack of training opportunities, competing needs, lack of expertise to provide training, poor integration of HIV and mental health care, limited resources, stigma.
- 30/77 = 39.95 had previous training in HIV psychiatry; 27/78 = 34.6% had previous training in HIV psychiatry in residency.
- 45/73 (61.6%) prefer to attend an educational program at institution in home country.
- Workshops, small group sessions and lectures are preferred learning methods.

CONCLUSIONS: Respondents report a high desire for more training in HIV Psychiatry, particularly in the areas of drug interactions and working effectively in care systems. Commonly sited learning barriers should be considered when developing educational programs.

P166
A CELL PHONE-BASED ANTIRETROVIRAL ADHERENCE INTERVENTION IN KENYA

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BACKGROUND: Few targeted interventions have proven to boost ART adherence above standard practice levels. A recent telephone support protocol showed adherence benefit in a US-based clinical trial. In Kenya, we had previously demonstrated that mobile phones were used frequently among patients attending HIV clinics in Nairobi, yet they were infrequently used for health management purposes. We hypothesized that strategic cell phone use in resource-limited settings could improve communication efficiency with patients and thus improve ART adherence and health outcomes.

DESCRIPTION: From May 2006 to October, 2008, participants were enrolled in a randomized controlled trial (RCT) at three clinics (two urban and one rural) in Kenya is being undertaken to test a cell phone-based intervention that uses short message service (SMS or 'texting') to provide ART patients with reminders, support, and side effect triage. Patients are eligible if they own a phone, or have daily access to a shared phone. The intervention is compared with the standard of care on ART adherence, HIV viral load suppression, health and economic outcomes for six months of follow-up.

LESSONS LEARNED: Baseline data were available for 576 subjects enrolled, of which 485 (84.2%) owned a mobile phone and the rest had shared access. The mean age was 36.5 years (range 19-83) and 225 (66.3%) were female, who also had high rates of phone ownership (81.9%). Common feedback from the participants was that "it feels like somebody cares". Participants largely preferred SMS slogans to number codes or health-related messages. Challenges include improving consistency of patient weekly responses. Interestingly, the intervention protocol maintains HIV status confidentiality, however, 504 (87.5%) said they would be comfortable receiving HIV messages on the phone. Significant time and monetary investments were reported to attend the clinics, so cell phone communications could be an efficient alternative in some circumstances.

NEXT STEPS: Outcomes of the study will demonstrate if the current protocol benefits adherence, viral suppression and health in ART recipients. Analysis of logistics and patient factors will guide the protocol for scale up.

P167
UPTAKE OF HIGHLY ACTIVE ANTIRETROVIRAL THERAPY (HAART) FOR HIV INFECTION IN A LARGE COMMUNITY-BASED STUDY OF INNER CITY RESIDENTS

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OBJECTIVE: To evaluate uptake of HAART in a community-based inner city cohort.

METHODS: CHASE is a study of Vancouver inner city residents recruited from January 2003 to June 2004. HIV status was determined through linkages with provincial databases. Information on HAART (prescriptions for triple drug antiretroviral therapy) was derived from the BC Provincial Drug Treatment Program (until June 2007). HAART uptake and associated factors were evaluated.

RESULTS: Among 2,913, 630 (21.6%) were HIV-infected. In total, 58.9% had ever received HAART (371 of 630) and 48.7% (n=307), 39.5% (n=249) and 23.0% (n=145) had ever received >6, >12, and >24 months of continuous HAART, respectively. Among 575 with CD4 testing, 63.5% (n=365) had a nadir CD4 <200 (nCD4), with 84.8% (318 of 365) ever receiving HAART. At most recent follow-up, 39.6% (214 of 541 alive subjects) received HAART and 72.0% (154 of 214) had HIV RNA <50 copies/mL. Following multiple logistic regression analysis, factors independently associated with HAART uptake included nCD4 <200 [AOR=26.94 (95% CI, 16.36-44.36), p <0.001], HCV co-infection (AOR=1.90, 1.00-3.62, p=0.05), having a regular doctor (AOR=3.80, 2.07-6.94, p <0.001) and recent methadone maintenance treatment (AOR=1.89, 1.14-3.14, p=0.014). Unstable housing (AOR=0.54, 0.34-0.88, p=0.012) and female sex (AOR=0.58, 0.36-0.94, p=0.026) were associated with lower HAART uptake. Factors associated with >24 months of continuous HAART were nCD4 <200, (AOR=6.39, 3.65-11.21, p <0.001), having a regular doctor (AOR=5.68, 2.17-14.87, p <0.001), recent methadone maintenance treatment (AOR=1.85, 1.18-2.89, p=0.007) and older age (AOR=2.06 per 10 year increase in age, 1.55-2.74, p <0.001). Injection drug use (AOR=0.58, 0.37-0.90, p=0.016) and unstable housing (AOR=0.68, 0.44-1.04, p=0.074) were inversely associated with receipt of >24 months of continuous HAART.

CONCLUSIONS: In this community-based cohort of inner city residents, low rates of continuous HAART uptake and maintenance were observed. Expanding HAART access through existing health services, such as methadone maintenance programs, may enhance treatment uptake in this population.

P168
THE IMPACT OF ANTIRETROVIRAL THERAPY ON INCIDENT HYPERTENSION AMONG A HIV-POSITIVE ART-NAÏVE NORMOTENSIVE COHORT IN TANZANIA

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INTRODUCTION: Cardiovascular disease is the major cause of death in the developing world. Hypertension is increasingly common among HIV-positive individuals(PHAs) and a risk factor for CVD.

Tanzania is a poor sub-Saharan African country heavily hit by HIV/AIDS. The Shree Hindu Mandal Hospital (SHMH), a private hospital located in Dar-es-Salaam, offers care and treatment to PHAs from across the country.

OBJECTIVE: To assess the relationship between BP and antiretroviral therapy (ART).

METHODS: Fifty-two consecutive PHAs attending SHMH's outpatient HIV clinic were enrolled in this retrospective study. Subjects were ART-naïve, not receiving antihypertensive therapy, normotensive, and initiating ART at study entry.

Hypertension was defined as BP≥140/90mmHg or on antihypertensive therapy. Crude and adjusted univariable analyses and multiple linear regressions were performed to assess BP change over time by ART, risk factors for hypertension, and other variables.

RESULTS: Study population characteristics: mean age (SD) of 39.5 (7.9) years; 53.8% male; 17.4% current smokers; 78% on HAART (majority receiving stavudine, lamivudine, and nevirapine), and remaining subjects on mono/combo-therapy.

Weight and BMI significantly increased over time (p <0.05); largely represented by weight gain in women. Mean weight and BMI at baseline, 6, and 12 month were 61.9kg (22.5kg/m^2) vs. 62.1kg (25.8kg/m^2); 64.4kg (22.3 kg/m^2) vs. 73.3kg (28.8kg/m^2); and 64.4kg (22.5kg/m^2) vs. 72.6kg (28.3kg/m^2) for men and women respectively. CD4 count increased over time with greatest change among women (p >0.05).

Mean baseline BP (SBP/DBP) increased from 117.8/73.1mmHg to 125.3/78.1mmHg, and 126.1/78.6mmHg at 6 and 12 months respectively and was different than follow-up BPs (p <0.001). Incidence of hypertension was 9.1% and 7.7% per year at 6 and 12 months respectively.

In age-, sex-, antihypertensive therapy-adjusted multiple linear regression for BP change, men (SBP/DBP: β=–6.1/–8.3mmHg), with higher baseline BMI (β=–1.3/–0.74mmHg) and on NNRTIs (β=–14.4/–8.9mmHg) experienced less BP change after 6 months of ART (p <0.05); NNRTIs may be associated with less BP change at 12 months.

CONCLUSIONS: ART increased weight, CD4 count, and BP over time. Women experienced the greatest weight gain. NNRTI use, male gender and higher baseline BMI were associated with lower positive BP changes 6 months after ART-initiation. Incidence of hypertension was 8.4% per year.

P169
"CULTURAL SAFETY" PROMOTES EQUITABLE HIV OUTCOMES AMONG URBAN ABORIGINAL PEOPLES WITH HIV

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BACKGROUND: In numerous population-based studies, Aboriginal peoples have been shown to have inferior outcomes on HIV treatment. Within Vancouver's Downtown Eastside community our centre is an Aboriginal-Health-Service organization that provides full service HIV care in an environment of "cultural safety" for Aboriginal peoples.
RESEARCH OBJECTIVE: To compare rates of HIV care engagement and success between Aboriginal and non-Aboriginal patients at our centre.
METHODS: Aboriginal and non-Aboriginal patients enrolled in our HIV care database were evaluated. Demographic data and rates of syphilis screening, pneumococcal immunization, TB screening, antiretroviral uptake (proxies for HIV care engagement) and viral load suppression (proxy for HIV care success) were calculated. T-tests were used to evaluate differences between Aboriginals and non-Aboriginal patients. Regression analysis was used to identify influential demographic variables.
RESULTS: Of 313 patients 52% identified as Aboriginal. Apart from a higher proportion of Aboriginal females (%47 vs 18%, p <001) baseline demographics and median CD4 counts were similar for both groups. The pneumovax immunization rate (51% vs 44%), syphilis screening rate (51% vs 48%), ARV uptake (64% vs 55%), and plasma viral load suppression rate (71% vs 72%) were also found to be similar between Aboriginal and non-Aboriginal patients. Regression analysis reveled that male gender was associated with lower rates of antiretroviral uptake (HR 2.71, p=0.46), and current cocaine use was associated with lower rates of viral suppression (HR 2.45, p=0.018).
CONCLUSIONS: In our program Aboriginal peoples achieved similar rates of HIV care engagement, ARV uptake and virologic suppression compared to non-Aboriginals. This "unexpected" equity may relate to the environment of "cultural safety" espoused by our Aboriginal-Health-Service organization. In the contest of HIV care, promotion of cultural safety may help reduce HIV care inequities for Aboriginal peoples.

P170
SUBOPTIMAL LABORATORY MONITORING OF ART WITHIN A UNIVERSAL ACCESS ART PROGRAM IN ARGENTINA

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BACKGROUND: Despite free access to medications, care and laboratory testing in Argentina, anecdotal evidence suggests that there are high rates of missing lab appointments and suboptimal follow up, in patients receiving care through the Argentinean Federal HIV Program.
METHODS: We conducted a longitudinal study of ART-naïve individuals who triple combination ART in the PUMA cohort between January 2003, to August 2008. PUMA is a collaboration of 16 HIV treatment clinics in Argentina. Suboptimal monitoring was defined as a lack of CD4 or pVL measurement within a 6 month period. We described the proportion of individuals with sub-optimal monitoring over time and examined risk factors for having sub-optimal monitoring.
RESULTS: A total of 1023 patients initiated ART; 349 (34.1%) females and 674 (65.9%) males. The median CD4 count was 141 cells/ µL and 78 (7.6%) had an AIDS defining illness at baseline. In a median of 27 months of follow-up, 658 (64.1%) experienced at least one gap of ≥6 months without a pVL or CD4 cell count measurement. 398 (60%) of these had one gap, 201 (31%) had two gaps and 59 (9%) had 3 or more gaps. The median duration of a gap was 12 months. Patients with sub-optimal monitoring had lower baseline CD4 cell counts (126 vs. 183 cells/µL; p=0.001) and were more likely to have a history of injection drug use (IDU) (14 vs. 7%; p <0.001), be Hepatitis C virus (HCV) sero-positive (18 vs. 9%; p <0.001) and access care in Buenos Aires (87% vs. 77%; p <0.001). Multivariate logistic regression analysis revealed that sub-optimal monitoring was associated with HCV sero-positivity (AOR=1.86; 95% CI1.14-3.01) and inversely associated with year of ART start (AOR=0.47 per year; 95% CI 0.41-0.53).
CONCLUSION: Sub-optimal monitoring is common in HIV treatment programs in Argentina. Better means of ensuring appropriate monitoring of ART patients are clearly needed.

Clinical Sciences – Issues in Women and Children

P171
MICRONUTRIENT STATUS OF CHILDREN WITH HIV: A RETROSPECTIVE REVIEW

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OBJECTIVES: Nutritional status is closely related to immune function in HIV-infected individuals. Micronutrient deficiencies, including selenium, vitamin B12, vitamin A, carotenoids, and zinc are associated with excess morbidity/mortality in observational studies of HIV-positive adults. Few studies of micronutrient status or supplementation have been done in HIV-infected children. We conducted a retrospective review of our patients' micronutrient levels, as well as their immunologic and clinical parameters.
METHODS: The health records of HIV-positive children 0-18 years attending CHEO's HIV clinic were reviewed from Sept/2006 – Sept/2008. Vitamin A, vitamin D, vitamin E, zinc, selenium, iron, and albumin levels were noted, along with their demographics, CDC immunologic stage, viral load, treatment, and growth parameters. Basic statistical analyses were employed to determine associations between micronutrient levels and clinical parameters.
RESULTS: The health records of 26 patients aged 3-17 years were reviewed. All were being treated with HAART, for a duration of 2 weeks to 11 years. Most were of black race (22), with a small number being white (2) or aboriginal (2). Seven were Canadian born; the remainder had immigrated to Canada 2-14 years previously. Evaluation of growth parameters revealed that 3 children were <10th percentile for weight and BMI, while 6 were <10th percentile for height. All had CD4 counts in CDC immunologic stage 1 or 2, and viral loads were undetectable in 16 patients, between 50 and 1000 copies/mL in 5 patients, and >1000 copies/mL in 5 patients. Low levels of vitamin A, vitamin D, iron, and zinc were noted in 6/25, 8/25, 1/25, and 9/26 patients respectively.
CONCLUSIONS: Micronutrient deficiencies were common in HIV-infected Canadian children on HAART, particularly deficiencies of zinc and vitamins A & D. The effect of vitamin and micronutrient deficiency and supplementation on children with HIV in resource-replete countries is not known, and bears further investigation.

P172
RESEARCH ON WOMEN – ARE WE DOING ENOUGH? AN ANALYSIS OF ABSTRACTS RELEVANT TO WOMEN AT A MAJOR HIV CONFERENCE

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BACKGROUND: There is concern over lack of research relevant to HIV and women. To assess this, we surveyed abstracts relating to women and girls presented at a major international scientific conference on HIV/AIDS: IAS 2007 in Sydney, Australia.
METHODS: All accepted abstracts were screened for female keywords and then reviewed to confirm true relevance to women using a priori criteria (studies concerning women's or female issues; study samples >50% female; and/or some gender analysis). Data was collected on abstract type and topic. A sub-analysis assessed gender breakdown in all conference abstracts presented as orals from studies with human cohorts.
RESULTS: Of 3239 abstracts submitted, 1666 regular and 17 late-breaker abstracts were accepted for oral or poster presentation, or CD-ROM publication. Keyword search identified 368 abstracts of which 304 were

confirmed as meeting a priori criteria. These represented 18.1% of all abstracts and 22.6% of all oral presentations. Of these, 7.2% were in Basic Science; 43.7% Clinical Research, Treatment and Care; and 47.4% Prevention. Fifty-nine studies (19.4%) related to mother-to-child transmission (MTCT) and 37(12.2%) to pregnancy or other aspects of reproductive health. Twenty-two studies (7.2%) focused on infants, children or youth. Of 75 oral abstracts with human cohorts, 8 studies (10.7%) were in men only; 16 (21.3%) in women only; 15 (20%) in both; and 36 (48%) provided no gender breakdown of their samples.

CONCLUSIONS: Despite the global HIV epidemic now reaching gender parity, research relevant to women at a major HIV conference was <20% of total abstracts. A significant proportion of research was in MTCT and other aspects of pregnancy and reproductive health. In studies with human cohorts presented as orals, almost half provided no gender breakdown of their sample in the abstract. Researchers should be encouraged to conduct more women-specific HIV research and at a minimum evaluate their findings according to gender.

P173
REPORT OF 2 CASES: USE OF NEWER ANTIRETROVIRAL AGENTS (DARUNAVIR, ETRAVIRINE ± RALTEGRAVIR) IN PREGNANT TREATMENT-EXPERIENCED HIV-POSITIVE WOMEN

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BACKGROUND: Darunavir, etravirine and raltegravir are usually reserved for the management of highly treatment-experienced HIV-positive patients. However, there are no data describing the safety of these drugs during pregnancy.

METHODS: We present two cases describing obstetrical, infant and treatment outcomes associated with the use of regimens including darunavir, etravirine and raltegravir during pregnancy in heavily treatment-experienced HIV-positive women.

RESULTS: Case 1: A 19-year-old HIV-positive heavily treatment-experienced woman was initiated on combination therapy with zidovudine, lamivudine, tenofovir, darunavir/ritonavir, etravirine and raltegravir six months prior to becoming pregnant. Viral load at conception and throughout pregnancy was <50/mL.

Case 2: A 17-year-old heavily treatment-experienced perinatally-infected HIV-positive woman was initiated on combination therapy consisting of abacavir, lamivudine, zidovudine, tenofovir, darunavir/ritonavir, and etravirine at 4 months gestational age. She was admitted to hospital for directly observed treatment two weeks prior to delivery. Suppression of viral load to undetectable levels was not achieved.

Both were anemic, but no congenital abnormalities were identified. Definitive HIV testing for both infants revealed that they were not infected.

Additional clinical outcomes are summarized in Table 1.

	Case 1	Case 2
Maternal age	**19 years**	**17 years**
Maternal CD4 count prior to initiation of current antiretroviral therapy	0 cells/mm^3	350 cells/mm^3
Maternal viral load prior to initiation of current antiretroviral therapy	185,719 copies/mL	6,379 copies/mL
Gestational age at delivery	40 weeks, 4 days	39 weeks
CD4 count at delivery	330 cells/mm^3	350 cells/mm^3
Viral load at delivery	<50 copies/mL	2,017 copies/mL
Method of delivery	Spontaneous vaginal delivery	Elective caesarean section
Infant birth weight	2.7 kg	3.2 kg
Obstetrical complications	None	None
1-minute APGAR score	9	9
5-minute APGAR score	10	9
Intravenous zidovudine during labour and delivery or caesarean section	Yes	Yes
Antiretroviral post-exposure prophylaxis for infant	Yes	Yes

CONCLUSIONS: We document the first cases of combination therapy including darunavir, etravirine and raltegravir during pregnancy. Vertical transmission was averted in both cases. No congenital anomalies were observed in either infant. While these observations are reassuring, additional studies and registries are required to establish the safety and efficacy of these agents during pregnancy.

P174
USE OF TENOFOVIR DISOPROXIL FUMARATE (TDF) AND EMTRICITABINE (FTC) IN PREGNANCY: REVIEW OF DATA FROM THE ANTIRETROVIRAL PREGNANCY REGISTRY (APR)

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BACKGROUND: The beneficial role of antiretrovirals (ARVs) in the prevention of mother-to-child transmission (PMTCT) of HIV was first demonstrated in 1994 in ACTG Study 076 using zidovudine (ZDV) monotherapy. Studies of TDF and TDF/FTC have demonstrated benefit in PMTCT in animal models and in pregnant women. However, the safety of prenatal ARV exposure to the fetus has not been established.

METHODS: The APR is an international, prospective, registry designed to collect and evaluate data on the outcomes of pregnancy exposures to ARVs. This Registry is intended to provide an early signal of teratogenicity associated with prenatal use of ARVs. Sufficient numbers of 1st trimester exposures to 14 ARVs have been monitored to detect at least a 1.5-fold increase in overall birth defects for ZDV and 2-fold increase in overall birth defects for TDF and FTC.

RESULTS: Through 31 July 2008, there were 11,950 prospective pregnancy cases reported to the Registry. No overall increase in congenital anomalies in infants following any 1st or 2nd/3rd trimester ARV exposure has been seen compared to the general population. Prevalence of anomalies with any ARV exposure in the 1st trimester 2.9/100 live births (95% CI: 2.4-3.5) [126/4329]; with 2nd/3rd trimester exposure 2.6/100 live births (2.2-3.0) [145/5618]; with 1st trimester exposure to TDF 2.3% (1.3-3.9) [14/606]; with 2nd/3rd trimester exposure 1.5% (0.5-3.4) [5/336]; with first trimester exposure to FTC 3.2% (1.4-6.2) [8/252]; with 2nd/3rd trimester exposure 1.5% (0.2-5.3) [2/134]; with first trimester exposure to ZDV 3.1% (2.5-3.7) [94/3068]; with 2nd/3rd trimester exposure 2.7% (2.3-3.1) [161/6063].

CONCLUSION: To date no increase in prevalence of congenital anomalies in live births with exposure to TDF (n=942) or FTC (n=386) has been seen through prospective voluntary reporting to the APR. Additional studies of women receiving TDF or TDF/FTC during pregnancy and for PMTCT are warranted.

P175
NON-NEVIRAPINE, NON-NELFINAVIR HAART IN PREGNANCY: A CASE SERIES

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BACKGROUND: As more women become experienced with highly active antiretroviral therapy (HAART), resistance development will necessitate the use of unstudied regimens for both maternal health and prevention of mother to child transmission (MTCT).

OBJECTIVE: To review maternal and neonatal outcomes in pregnancies exposed to novel HAART regimens.

METHODS: Interrogation of a prospectively collected database of HIV infected pregnancies from 1999-present, identified pregnancies where HAART regimens other than those including nevirapine or nelfinavir were used. Patient demographics, CD4 and viral load (VL) in early pregnancy and delivery, gestational age (GA) at delivery and birth weight were collected.

RESULTS: 43 women were identified. These included at least three of saquinavir, ritonavir, abacavir, lopinavir, efavarinz, D4T, DDI, AZT or 3TC. Mean years since diagnosis was 5.1 (range 0-17). Early pregnancy mean CD4 was 328 (range 40-1500) and mean VL 38205 copies/ml (range undetectable to >100,000). At delivery, mean CD4 was 462 (60-1620) and VL 117 (undetectable-2240). No significant maternal medical complications occurred on therapy. 83% had VL <50 copies/ml at delivery. Mean GA at delivery was 38 wks. Three stillbirths at 20-21 weeks, and four preterm deliveries at 30, 31,

36 and 36 weeks occurred. Stillbirths were related to two obstetrical complications (incompetent cervix, severe oligohydramnios) and one trisomy 21. Mean birth weight was 3001g (range 1530-4075g). The preterm delivery rate was 9.3% (4/43) and stillbirth rate was 6.9% (3/43).
CONCLUSION: Of women requiring novel HAART therapy to prevent MTCT, these regimens appeared well tolerated and viral suppression was achieved in a large proportion (83%) Preterm delivery rates were similar to non-HIV populations. The stillbirth rate was well in excess of non-HIV populations (6.9% vs 0.2%). Obstetrical and genetic factors, rather than HAART were likely causative.

Clinical Sciences – Malignancies

P176
IMPROVED SURVIVAL OF PATIENTS WITH HIV-ASSOCIATED BURKITT LYMPHOMA TREATED WITH INTENSIVE CHEMOTHERAPY IN THE HAART ERA

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BACKGROUND: HIV+ patients (pts) present regularly with Burkitt Lymphoma (BL). Standard chemotherapy (CT) results in a median overall survival (OS) of only 6 months. Intensive CT such as the Magrath regimen (CODOX-M/IVAC + rituximab [R]) results in long term OS in non-HIV-BL of >85%.
METHODS: We retrospectively reviewed 12 pts with HIV-BL receiving Magrath CT to identify the frequency of toxicity and BL response and survival. Data were collected from the CFE database and by chart review.
RESULTS: The median age at BL diagnosis (dx) was 45 years. BL was advanced stage/high risk in 11. Median CD4 count and HIV viral load were 380 cells/ul and undetectable (n=11), respectively. 11 pts received HAART with CT. Number of Magrath CT cycles (of 4 planned) were: 4, n=4; 3, n=1; and 1-2, n=6 (2 pts on treatment). 8 pts received R. All pts received CNS prophylaxis and 11 G-CSF (n=11). Complications were: bacterial infection, n=10 episodes in 5 pts; febrile neutropenia, n=4; late neutropenia, n=4; peripheral neuropathy, n=2 (grade 3, n=1); increased LFT, n=1 (in a hepatitis C+ pt); skin reaction, n=1; hallucinations, n=1. Grade 3-4 HT occurred in all 12 pts but CT dose reduction or delay was required in only 2. At a median follow-up of 9.6 months, 10 pts (78%) are alive. All 8 pts receiving HAART and rituximab with CT are alive. There were 2 deaths, both from progressive BL, 1 in a pt with CNS involvement and 1 in a pt not receiving HAART.
CONCLUSIONS: Pts with HIV-BL have acceptable tolerance of Magrath CT. The OS for pts without CNS involvement appears to be superior to standard CT and is similar to that seen in non-HIV-BL provided HIV control is optimized. There were no pts receiving Magrath CT with rituximab and HAART that succumbed to BL.

Clinical Sciences – Pharmacology and Pharmacokinetics

P177
DRUG-DRUG INTERACTION BETWEEN ITRACONAZOLE AND THE PROTEASE INHIBITOR LOPINAVIR/RITONAVIR

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BACKGROUND: There is very limited published experience to support dosage adjustments in patients receiving itraconazole and antiretroviral therapy.
OBJECTIVES: To describe the bidirectional effect of concomitant itraconazole and lopinavir/ritonavir therapy in an HIV positive patient with disseminated histoplasmosis infection.
METHODS: Chart review, serum itraconazole and lopinavir levels.
RESULTS: A 34 year-old HIV-infected man who had recently initiated efavirenz-based antiretroviral therapy was diagnosed with disseminated *Histoplasma capsulatum* infection. In hospital, lopinavir/ritonavir 400mg/100mg twice daily replaced efavirenz to avoid efavirenz-itraconazole drug interactions. After 14 days of liposomal amphotericin B, itraconazole solution was initiated at 150mg twice daily for 3 days, followed by 200mg daily. Prior to itraconazole initiation, a lopinavir trough level was drawn (four days after initiating lopinavir/ritonavir) which was 7.4 mg/L. A repeat lopinavir trough level 15 days later, after 14 days of itraconazole, was 6.8 mg/L (recommended lopinavir trough level > 1.0 mg/L in treatment-naïve patients). An itraconazole level two hours post dose on day 15 of oral therapy was 1.9 µg/mL (itraconazole 1.4 µg/mL plus hydroxyitraconazole 0.5 µg/mL). The 2007 Infectious Disease Society of America (IDSA) guidelines for management of histoplasmosis recommend a level of itraconazole of at least 1.0 µg/mL, which would give a level well above the MIC of <0.01 µg/mL in all strains tested. After 2 weeks of liposomal amphotericin, urine *Histoplasma* antigen was 27.23 ng/mL; after 1 month on oral itraconazole therapy it had decreased to13.07 ng/mL. This test will be repeated every 3 months during therapy. Plasma HIV RNA has decreased 3.5 log10 in 3 months to 210 copies/mL. The patient has demonstrated marked clinical improvement.
CONCLUSION: In this case, dosing recommendations of itraconazole 200mg daily with lopinavir/ritonavir were appropriate. Until more experience is reported, we recommend that to ensure adequate treatment, drug levels of both lopinavir and itraconazole be measured at baseline and at steady state to guide dosing due to inter-patient variability.

P178
IMPACT OF TESAMORELIN (TH9507), A STABILIZED GROWTH HORMONE-RELEASING FACTOR (GRF) ANALOGUE, ON THE PHARMACOKINETICS OF SIMVASTATIN AND RITONAVIR IN HEALTHY VOLUNTEERS

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BACKGROUND: Tesamorelin is under development for the treatment of excess abdominal fat in HIV patients with lipodystrophy. Two independent phase 3 trials showed that daily administration of 2 mg tesamorelin for 26 weeks was well-tolerated and significantly reduced visceral adipose tissue. The literature suggests that human growth hormone may modulate cytochrome P450 (CYP) enzyme activity. Therefore, the potential impact of tesamorelin on CYP3A activity was investigated by examining its effect on the pharmacokinetics (PK) of drugs potentially administered concomitantly with tesamorelin: simvastatin (CYP3A-substrate) and ritonavir (CYP3A-inhibitor).
METHODS: In two randomized, open-label, two-way crossover studies, subjects were administered 2 mg tesamorelin on Days 1 to 7, with 80 mg simvastatin (n=58) or 100 mg ritonavir (n=32) co-administered on Day 6 (Treatment A), and a single dose of simvastatin or ritonavir alone on Day 6 (Treatment B) in a crossover manner. PK samples collected on Day 6, measured simvastatin, ritonavir and tesamorelin plasma concentrations. The A/B ratios and 90% confidence intervals (CI) within 80-125% would conclude that tesamorelin has no clinically significant impact on simvastatin or ritonavir PKs.
RESULTS: Simvastatin: ratios of least squares geometric means and corresponding 90% CIs for AUC0-t, AUC0-inf and Cmax were contained within the acceptance range. For the metabolite simvastatin acid, only the lower CI for AUC0-inf (78.6%) fell slightly outside of the range. Ritonavir: ratios and 90% CIs for AUCs were contained within the acceptance range, but for Cmax, the lower CI was 74.8%, suggesting a decrease in the rate (indicated by Cmax) of exposure. However, since the observed A/B ratios for AUCs and Cmax parameters were approximately 90%, these are minor decreases and no dose adjustment of ritonavir is required in presence of tesamorelin.
CONCLUSION: These studies showed that the impact of tesamorelin on CYP3A activity appears to be minimal. Either medication may be co-administered with tesamorelin without changing their dosing regimen.

Clinical Sciences – Prevention, Natural History and Monitoring

P179
HIV-1 C2V5 VIRAL SEQUENCE EVOLUTION AFTER TRANSMISSION IN A NEW HOST

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INTRODUCTION: Due to its high replication rate and the low fidelity of its reverse transcriptase HIV-1 evolves rapidly. However, immediately after transmission to a new host, viral diversity is generally low and increases during the course of infection. Phylogenetic analysis of viruses from epidemiologically linked infected individuals is an important tool to better understand viral evolution under immune pressures from different hosts. In this study, we examined viral evolution at time closest to transmission and at a follow up visit one year later in 3 transmission pairs.
METHOD: Subject population. Three transmission pairs were selected from a prospective cohort studying primary HIV infection in Montreal. 3 subjects received therapy within 12 months of acute infection, and 3 subjects did not initiate antiretroviral therapy. Viral sequences covering the C2V5 domains of gp120 were obtained from proviral DNA from peripheral blood mononuclear cells (PBMC), from plasma RNA and from replication-competent viruses recovered from cultured PBMCs. Sequences were aligned using Clustal W and pairwise nucleotide distances were estimated with Kimura two-parameter model.
RESULTS: Phylogenetic analysis demonstrated clear epidemiological linkage among each pair, with bootstrap value ≥ 99% with no evidence of contamination. After one year, we observed different patterns of viral evolution for individuals in each pair. For pair A and pair B, V3 evolved in opposite directions for each pair member: Patient A1 decreased 0.33% while A2 increased 1.18%; Patient B1 decreased 0.47% and B2 increased 0.35%. For pair C different evolution pattern were observed in other domains of gp120: C1 decreased 0.30% in V4 and 1.75% in V5 while C2 increased 2.81% in V4 and 1.34% in V5.
CONCLUSION: Transmitted viruses show different evolution pattern when entering a new host. These evolution patterns could be explained, in part, by the individual's breadth and strength of their immune responses, applying different selection pressure on the virus and thus modeling its evolution.

P180
CLINICAL CORRELATES OF HEALTH-RELATED QUALITY OF LIFE IN HIV-POSITIVE MEN AND WOMEN

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RATIONALE: With the advancement of HAART, people are now living chronically with HIV, but continue to face complex medical and social challenges. Quality of life (QoL) is an important clinical outcome in the management of HIV-positive men and women.
OBJECTIVE: To determine clinical correlates of QoL, as measured by the Medical Outcomes Study – HIV Health Survey (MOS-HIV) and SF-12v2 in HIV-positive men and women enrolled in the Canadian HIV Vascular Study, a prospective cohort study examining the relationship between HIV/AIDS, HAART and cardiovascular disease.
METHODS: Baseline cohort data for 53 men and women attending an outpatient HIV clinic in Hamilton were used in this analysis. Four linear regression models were created utilizing the physical health (PHS) and mental health (MHS) summary scores of both the SF-12v2 and MOS-HIV as outcome measures (SPSSv17). Clinical variables included were age, gender, years living with HIV, smoking (current or former), current marijuana use, drug use, current receipt of NNRTI or PI-based HAART, nadir CD4 and hours slept each night.
RESULTS: Age was associated with the SF-12v2 MHS (β=0.336, p=0.014) in multivariable analysis. Years lived with HIV (r=0.287, p=0.018) and receipt of NNRTI-based HAART (r=0.271, p=0.025) were significant correlates in univariable analysis, but not in the multivariable model. Years lived with HIV (β=–0.256, p=0.032) and current NNRTI-based therapy (β=0.242, p=0.075) were important correlates in the multivariable model associated with SF-12v2 PHS. In multivariable analysis, years lived with HIV was the only variable associated with MOS-HIV PHS (β=–0.246, p=0.068); and current use of marijuana was the only variable associated with MOS-HIV MHS (β=–0.277, p=0.045), even though receipt of a NNRTI-based regimen was a significant variable in the univariable analysis (r=0.23, p=0.049).
CONCLUSION: NNRTI-based HAART is an important variable in improving PHS as determined by the SF-12v2 PHS, as well as MHS of the SF-12v2 and MOS-HIV, suggesting the role that HAART can play in improving overall QoL in HIV-positive men and women. Increasing years lived with HIV was also found to decrease one's SF-12v2 and MOS-HIV PHS.

P181
PRE-EXPOSURE PROPHYLAXIS: A RISING STAR IN HIV PREVENTION RESEARCH?

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BACKGROUND: Some HIV antiretrovirals may partially protect seronegative persons against blood-born and sexually transmitted infection. This decade saw the first clinical pre-exposure prophylaxis (PrEP) trials that aimed to demonstrate that. With challenging barriers to assuring universal access to antiretroviral therapy and use of known effective prevention strategies, and after recent setbacks in vaccine research, HIV PrEP is regarded by some as an approach that deserves to be explored.
OBJECTIVES: 1) To identify all past, current, and planned oral antiretroviral PrEP trials; and 2) to synthesize descriptive characteristics of oral antiretroviral PrEP trials.
METHODS: A systematic review of HIV PrEP clinical trials was conducted. Information sources included trial registries, electronic databases, specialized websites, the internet, and involved investigators/sponsors. Targeted source documents were trial registry files, study protocols, and study reports.
RESULTS: Thirteen HIV PrEP controlled trials (12 randomized studies, 1 cohort study) were identified: 2 completed and published, 3 halted, 5 ongoing, and 3 planned, all between 2002 and 2008. They comprise over 19,000 heterosexual men/women, men having sex with men, injection drug users and serodiscordant couples, living in more than 17 countries (mostly in Africa, but also in Latin America, South-East Asia and North America). Those trials (phases I/II through III) were designed to test the safety of, efficacy/effectiveness of, and/or adherence to nevirapine, tenofovir and/or emtricitabine/tenofovir pills. Eight of the trials are multinational but all are led and sponsored by American institutions. Sample size (144-4200) and methods vary across studies.
CONCLUSIONS: Early HIV PrEP studies have been associated with public controversies due to ethical concerns in host communities – leading to forced closure of some trials. This approach seems to generate more positive interest now. However, it remains important to ensure that PrEP trials are planned and conducted so that exploitation of –vulnerable– participants is prevented.

P182
UNPROTECTED SEX WHEN UNDETECTABLE: QUEBEC ETHICISTS CONCERNS OVER SWISS SEXUAL EXPOSURE GUIDELINES

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BACKGROUND: In January 2008, the Swiss Federal Commission on AIDS announced that sero-discordant couples could consider not using condoms when the HIV-infected partner is treated with antiretroviral therapy (ART) has had undetectable plasma viral load (VL) for > six months, in absence of other sexually transmitted diseases. This Statement has been hotly debated with many HIV specialists and other health professionals not endorsing this statement.
AIM: To identify ethical concerns raised by the Swiss statement among ethicists familiar with HIV ethical issues.
METHOD: Face-to-face interviews with 6 ethicists from the Province of Quebec were audiotaped, and the content was analyzed to identify main ethical dilemmas.
RESULTS: Ethicists' views were grouped into 4 themes: 1) People living

with HIV/AIDS determinants: Difficulties to meet Statement's conditions for reduced transmissibility in daily life, evaluation of potential increased risk-taking behaviours, reduction in stigmatization because of the decrease of risk of transmission, new motivation for better adherence and earlier ART initiation; 2) Serodiscordant couples: "very low risk is not zero risk" but partners did not expect absolute certainty from biomedical information, couples and not individuals should be put at the centre of the intervention, medicalization of sexuality, difficulties to control the VL undetectability for the HIV-negative partner; 3) Society: Need to evaluate changes in different populations' sex risk behaviour following the Swiss statement in prevention messages (reduction of condom use), monitoring of consequences of the prevention message integrating this more complex reality, weak impact on criminalization of HIV transmission; and 4) social actors in prevention: the need to reduce divergent positions among stakeholders, using an interdisciplinary approach.
CONCLUSIONS: The complex array of ethical challenges raised by the Swiss statement in the Quebec context can help integrated decision-making related to unprotected sex in selected persons with VL below limit of detection with ART.

P183
THE ASSOCIATION BETWEEN VIRAL LOAD MEASUREMENT RATE AND MORTALITY IN ONTARIO

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BACKGROUND: The number of viral load (VL) measurements per year has been considered as a measure of the quality of care of HIV positive individuals.
OBJECTIVE: We studied the relationship between mortality and the frequency of virologic measurement among HIV-infected patients who were enrolled in the OHTN Cohort Study (OCS) between 1996 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: 1592 patients who started ARVs after 1996 and with ≥2 VL measurements were included in this study. 85% were male, median age was 48 yr, median years of HIV infection was 18, 60% were MSM, 11% injection drug users (IDU), and 27% reported heterosexual contact. There was a median of 26 VL measurements per patient over a median follow-up of 8.9 years. 160 patients died during the study period. 490, 598, and 504 patients had rates of VL measurement of <3, 3-4 and >4 times per year, respectively. Participants in VL groups differed by age, HIV risk factor, hepatitis C status, and 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=1.65, p <.0001), VL measurement rate <3 times per year (HR=.63, p=0.04), VL measurement rate 3-4 times per year (HR=.60, p <.0001), age (HR=1.65 per decade, p <.0001), history of hepatitis C (HR=2.23, p <.0001) and baseline CD4 count (HR=0.81 per 100 cells/mm3, p <.0001).
CONCLUSION: 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, they have implications for using VL measurement frequency as an indicator of the quality of HIV care.

Clinical Sciences – Resistance

P184
HIGH LEVEL OF PRIMARY RESISTANCE IN A COHORT OF TREATMENT-NAÏVE INDIVIDUALS IN MALI

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BACKGROUND: As access to antiretroviral drugs increases in developing countries, it has been noted that drug resistance mutation patterns may differ in non-subtype B strains of HIV-1. Monitoring the emergence of resistance and defining the molecular pathways involved in the development of resistance in non-subtype B strains of HIV are important to develop sustainable treatment strategies.
METHODS: We performed genotyping resistance testing on plasma obtained from 101 HIV-infected treatment-naïve individuals from Mali, before they initiated antiretroviral therapy. Mutations were evaluated according to the Virco algorithm.
RESULTS: CRF AG_02 was the most common subtype representing 71.29% of the total isolates. Other subtypes represented included: B 5.94%, C 3.96, G 2.97, CRF06_CPX 7.92, CRF09_CPX 1.98, CRF01_AE 1.98, A2/CRF16_A2D 0.99, A1 1.98, and CRF13_CPX 0.99.
28% of isolates harbored resistance mutations. Mutations resistance associated NRTI was 25%, NNRTI 23.42% and PI 71.42%. The most frequent NRTI mutations were T215Y/A NNRTI were K103N/T and PI L10I/V. The minor PI mutation L10I/V was present in 18.81% of subjects and may represent a polymorphism. Phylogenetic analysis revealed that these isolates were not genetically related. Mutations were not associated with a particular subtype. Even if we do not consider the L10I/V mutation, the rate of primary resistance was still 9% with mutations associated NRTI 78%, NNRTI 67% and PI 11%.
CONCLUSION: Resistance mutations were seen 28% of subjects which is higher than what has been described previously in Mali and in Africa. Even if we do not consider the L10I/V mutation, the rate of primary resistance was still 9%. Our study reflects the need to monitor the evolution of resistance on a regular basis and follow the trends of transmitted resistance.

Epidemiology and Public Health – Epidemiology of Co-infection HCV/HIV

P185
MIXED GENOTYPE HEPATITIS C VIRUS (HCV) INFECTIONS AMONG HIV AND HCV CO-INFECTED ILLICIT DRUG USERS (IDUS)

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BACKGROUND: HCV genotype is a major determinant of both duration and response to antiviral treatment. In Canada most of the chronic HCV infections are either genotype 1 (60%) or genotype 2 or 3 (40% combined). Previous studies showed the possibility of re-infection in humans and animal models especially in the setting of an ineffective immune response. With this in mind, we evaluated the prevalence of mixed genotype HCV infection in a population of inner city IDUs, many of whom are co-infected with HIV.
METHODS: Using a retrospective-prospective study model, we evaluated patients receiving their primary and addiction care at Pender community health center on Vancouver's Downtown East Side. HIV and HCV antibody testing (with viral load and genotype testing done in antibody-positive patients) were performed.
RESULTS: Among 516 patients screened between 12/07 and 01/09, 217 (42%) had chronic HCV infection, 72 (14%) were found to be infected with HIV. Of these, 52 (72%) were infected with HCV. On genotypic analysis, 130 (60%) were geno 1, 71 (33%) were geno 3, 16 (7%) were geno 2 and 15 (7%) had mixed genotype infections. In the mixed genotype group 6 (40%) had geno 2a&2c, 5 (33%) had 1a&1b, 3 (20%) had 1&3 and 1 (7%) had geno 1&2. Among co-infected patients 4 (8%) carried a mixed genotype infection 3 has geno 1a&1b and 1 has geno 1&3. There was no difference between HIV infected and uninfected subjects. Correlates of viremic HCV infection in HIV-positive subjects include older age; mean age 45.2 years (SD 8.7) Vs 42.8 (SD 5.9) in the aviremic patients and male sex, 36/50 (72%) vs 12/19 (63%).
CONCLUSION: Viremic HCV infection in active IDUs is more common in the setting of HIV co-infection and correlates with previously identified factors associated with viremia as well as progressive immune disease. This is not associated with an increased rate of mixed genotype HCV infection. This suggests that this latter phenomenon is driven by factors other than intercurrent immune disease.

P186
INTERIM DESCRIPTIVE ANALYSIS OF HIV-HCV CO-INFECTION SERVICE DEFICIENCIES IN ONTARIO

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INTRODUCTION: The provision of optimal HIV-HCV co-infection (CI) care is limited by many factors. Few services are explicitly designed to address CI. An Ontario-based task force consisting of HIV and HCV care providers and community advisors was formed to determine what services are available and to identify what resources are lacking for individuals living with CI.

METHODS: A survey of CI care, treatment and support services available across Ontario was developed and administered via e-mail to individuals and organizations providing services for HIV and HCV including AIDS service organizations, community clinics, hospital settings and governmental agencies. To increase the sample and breadth of expertise surveyed, contacts were asked to forward the survey to additional individuals within their workplace providing HIV and/or HCV services. Survey Monkey was utilized to capture and tabulate responses.

RESULTS: 82 responses were evaluated. The following proportion of respondents identified these key CI management services as essential but limited in availability: Housing (40%), Primary Care Support (39%), Addiction Treatment (37%), Mental Health Treatment (35%), Social Work (32%), Nursing (32%) and Physician Expertise (31%), Ministry of Health Funding (28%), Aboriginal Support (25%), HCV Drug Treatment Expertise (24%). The majority of respondents were satisfied with AIDS service support (65%), HIV drug treatment expertise (63%), needle exchange services (75%), and pharmaceutical company financial support (57%). Key missing clinic expertise included: psychology (84%), psychiatry (37%), social worker (56%), a family doctor (25%) and hepatology (20%). 71% of respondents reported an absence of a CI peer support network.

CONCLUSIONS: A better understanding of the CI service landscape in Ontario is needed to resource a more integrated approach to treatment and support services. Recommendations informed with this perspective will contribute to a more comprehensive and multidisciplinary approach to care for individuals living with CI. Work to this end is ongoing.

P187
CHARACTERISTICS OF ONTARIO-BASED HIV-HCV CO-INFECTION SERVICE PROVIDERS AND THE POPULATIONS THEY SERVE

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INTRODUCTION: The demographic characteristics of those living with HIV-HCV co-infection (CI) in Ontario are not fully described. This information is a first step to determining resource needs and allocation. An Ontario-based task force consisting of HIV and HCV service providers and community advisors was formed in 2008 to determine what services are available and to identify what resources are lacking for individuals living with CI.

METHODS: A survey of CI care, treatment and support services available across Ontario was developed and administered via e-mail to individuals and organizations providing HIV and HCV services. To increase the sample and breadth of expertise surveyed, contacts were asked to forward the survey to colleagues within their workplace. Survey Monkey was utilized to capture and tabulate median results.

RESULTS: 92 responses were evaluated in this interim analysis. AIDS service organizations (37%), community health centres (21%), hospital settings (20%) and government agencies (7%) are represented. CI service providers were: 90% urban-based, 69% community-based and 94% provincially funded. 78% devoted 20-40% of their time to CI care. 41% of respondents provide HCV antiviral therapy. 21% conduct CI-related research.

CI populations in these settings included Whites (70%), Blacks (10%), Aboriginals (5%) and Asians (5%). 38% and 51% were between 21-39 and 40-54 years. 90% were English-speaking and 8%, French. 5% were Immigrants. 25% were MSM. 10% were fully employed, 5% were part-time and 60% were on ODSP. Risk factors for HCV exposure included: IDU (80%), Blood Products (5%), Sex (5%), Tattooing (5%), Unknown (5%).

CONCLUSIONS: This survey captured the opinions of a broad spectrum of HIV-HCV service providers in Ontario. The population of Ontario-based CI individuals is diverse. The complex process of determining resource needs and advising allocation based on this survey is on going.

P188
ISSUES IN PROVIDING HEPATITIS C TESTING AND SUPPORT IN PRIMARY CARE SETTINGS

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BACKGROUND: Injection drug use is a major risk factor for both HIV and Hepatitis C (HCV) infection in Ontario. This qualitative study was done to understand the experiences and concerns of primary care physicians about doing hepatitis C testing and treatment, as well as more general issues in providing care for patients who inject drugs.

METHODS: A convenience sample of 14 physicians was recruited through personal contacts and snowball techniques. Open-ended questions explored experiences with HCV testing and care, and barriers and facilitators to providing care for drug using patients. Interviews were tape-recorded and analyzed thematically. One physician was an internal medicine specialist, the rest were primary care providers. Twelve worked in downtown Toronto; two worked primarily in rural areas. Two were female; all but one trained in Canada. Length of time in practice ranged from 3-30 years.

RESULTS: Several issues were identified with respect to HCV testing, particularly need for open communication about risk, and difficulty doing follow-up antigen tests (needed to confirm chronic infection) after initial positive antibody tests. Specialist support was identified as crucial to providing care and treatment, and specific models of care were identified. Physicians treating MSM identified a lack of treatment and support for problematic methamphetamine use as an obstacle to HCV treatment and care. Physicians treating street-involved drug injectors at inner city clinics identified needs related to housing, nutrition, mental health, case management and addiction treatment as key issues. Some clinics had developed relationships with specialists who provided consultation and support, and primary care physicians identified their needs for such relationships to facilitate HCV care and treatment. Needs for care providers including nurses, counsellors, and outreach workers were also identified. One clinic offered a model of peer education and support regarding HCV particularly useful in developing treatment readiness and in supporting patients through treatment.

CONCLUSIONS: This study identified a number of barriers to HCV testing, treatment and support, and also provided information on models of care and potentially helpful policy and programming approaches.

P189
INCIDENCE OF HIV AND HCV CO-INFECTION IN ABUJA, FEDERAL CAPITAL OF NIGERIA

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The aim of this study was to determine the prevalence of HIV and Hepatitis C Virus Co-infection in Abuja the Federal Capital of Nigeria.

Blood samples from 1022 patients attending various hospitals in Abuja were collected and screened for Human Immunodeficiency Virus (HIV) and Hepatitis C Virus respectively.

Results show that 206 (20%) patients were infected with HIV while 816 (80%) were not infected with HIV.

Among the 206 patients that have HIV, 6 patients were also infected with Hepatitis C Virus (HCV). This gives a generalized HIV and HCV Co-infectivity of 3%.

A total of 67% males and 33% females were Co-infected with HIV and HCV.

Among the 816 (75%) patients that were HIV negative, 42 (5%) were positive for HCV, while 774 (95%) were HCV negative.

A total of 21 males and 21 females were HCV positive and HIV negative.

A total of 95% patients were HCV negative and 5% were positive for HCV.

CONCLUSION: HCV infection is more serious in HIV-infected persons. Co-infection with HCV may also affect the treatment of HIV infection. Therefore, it is important for HIV-infected persons to know whether they are also infected with HCV and if they are not, to take steps to prevent infection.

P190
HOW BISEXUAL MEN DIFFER FROM GAY MEN IN HIV, HCV AND HIV-HCV CO-INFECTION AND SOCIO-BEHAVIOURAL CHARACTERISTICS IN TWO CROSS-SECTIONAL STUDIES IN ONTARIO

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OBJECTIVES: To compare the prevalence of HIV, HCV, and HIV-HCV co-infection between bisexual and gay men in two cross-sectional studies undertaken at different points in time.

METHODS: Data were from two comparable samples involving self-completed, venue-based surveys of MSM in Toronto and Ottawa (Ontario Men's Survey (OMS) in 2002 and M-Track (Lambda) in 2007). Means and frequencies were compared. Logistic regression was used to assess the effects of sexual identity on HCV, HIV-HCV positivity.

RESULTS: OMS included 12.2% bisexual (n=355) and 84.9% gay men (n=2,480); and Lambda 9.8% bisexual (n=217) and 84.8% gay men (n=1,876). In both studies, bisexual men were younger and less well educated. Further, proportionately fewer bisexual men were Caucasian, Canadian born, reported UAI with a male ever, an STI ever, or had ever tested for HIV. Bisexual men were more likely to report receiving financial and non-financial commodities in exchange for sex, and to use injection and non-injection drugs. A greater proportion of specimens was provided by IDU in Lambda than in OMS. HCV, HIV-HCV positivity was consistently higher among bisexual men in both studies. However, after adjusting for injection drug use, HCV or HCV-HIV co-infection was not associated with sexual identity.

	HIV prevalence (%)		HCV prevalence (%)		HIV-HCV prevalence (%)	
	Bisexual	Gay	Bisexual	Gay	Bisexual	Gay
OMS (2002)	7.3	11.3	3.7	1.5	1.4	0.6
Lambda (2007)	14.7	20.7	8.0	3.0	5.3	2.2

CONCLUSIONS: HIV prevalence almost doubled in the 2007 study compared to the 2002 study. This may be due to calendar time differences between studies, the influences of HAART, the higher proportion of biologic specimen provided by IDU in 2007 or methodologic differences between the studies. Compared to gay men, more bisexual men were HCV positive and HCV-HIV co-infected but fewer were HIV positive, a finding likely attributable to a higher proportion of injection drug users among bisexual men and not sexual identity itself.

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P191
HIV+25 SURVEY: INSIGHT INTO CANADIANS LIVING WITH HIV/AIDS

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OBJECTIVE: To survey Canadians living with HIV/AIDS on issues related to the disease and its management

METHODOLOGY: 381 PHAs across Canada were surveyed from May 29 to August 19 2008. Data was collected via an Internet or phone-based questionnaire. Margin of error for this research (at a 95% confidence interval) was 5%.

RESULTS: Issues explored in the survey were 1) Impact on PHAs' lives 2) Knowledge of the disease and its treatment 3) Treatment and management 4) Access to health care and community support. Main results for each category of questions are: 1) Almost all (82%) respondents said there is still a stigma attached to being HIV positive. Over half (52%) said living with HIV/AIDS impacts their ability to find a job. Further, 55% stated they feel depressed and almost as many (45%) reported feeling isolated. 2) A third (34%) are not fully informed regarding the complexities of the disease. 55% are somewhat, not very or not knowledgeable about treatments. The less knowledgeable PHAs are about HIV and treatments, the less adherent they are to treatment regimes. 17% of respondents did not know what an undetectable viral load means. 3) 91% mentioned wanting treatments with fewer side effects. Fatigue was cited as a side effect by 68% of those on treatment, while 53% mentioned sleep disturbances and 48% diarrhoea. 4) The majority of the respondents are satisfied with their present medical and community support. There is still opportunity for further education among health care professionals.

CONCLUSION: Twenty-five years after the discovery of the virus, a large majority of Canadians living with HIV/AIDS still feel stigmatized and there remains a strong need for further continuing education, outreach and better treatments.

P192
ESTIMATING THE IMPACT OF EXPANDED ACCESS TO ANTIRETROVIRAL THERAPY ON MATERNAL ORPHANS IN SUB-SAHARAN AFRICA, 2007-2016

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BACKGROUND: Combination antiretroviral therapy (cART) reduces mortality among HIV-positive individuals. Studies have examined the effects of the HIV/AIDS pandemic on the incidence of AIDS orphanhood in sub-Saharan Africa. However, none have explored this within the context of expanded cART uptake.

METHODS: We sought to determine the impact of expanded cART access on the prevention of maternal orphans in 10 sub-Saharan African countries with elevated rates of AIDS orphanhood. We created a demographic projection model to estimate the number of children born to HIV-positive adult women (age 15 to 49 years) on cART over a 10-year period, from 2007 to 2016. We applied country- and sex-specific rates for cART uptake and fertility obtained from UNAIDS, the WHO, and the United States Census Bureau. HIV incidence and mortality rates for women on cART were obtained from long-term cohort studies.

RESULTS: According to current rates of cART uptake, 3.76 million women will be receiving HIV treatment by 2016 in the ten sub-Saharan African countries under study. Approximately 3.04 million children will be born to the women on cART and 6.31 million children to those not receiving cART. An estimated 347.8 thousand women on cART, and 7.34 million women not on cART, will die from HIV-related causes. A total of 3.0 million children will continue to have their mothers alive due to cART use, representing maternal AIDS orphans averted. As a consequence of country-specific HIV prevalence, fertility rates and rate of cART uptake, the rate of maternal AIDS orphans averted is highest in Malawi (136.12), Zambia (128.22), and Mozambique (113.50) and lowest in South Africa (39.60), Zimbabwe (60.38) and Kenya (62.44).

CONCLUSION: Our study demonstrates that expanded cART access to women will prevent an important number of maternal AIDS orphans over the next ten years. This impact will be greatest in countries with elevated rates of cART uptake and fertility.

P193
RISK BEHAVIOUR AMONG EAST (EAST AFRICAN HEALTH STUDY IN TORONTO) PARTICIPANTS WITH MULTIPLE SEXUAL PARTNERS

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OBJECTIVE: To examine risky sexual behaviours of East Africans reporting two or more sexual partners in the previous year.

METHODS: EAST is the first HIV-related epidemiologic study in Canada of immigrants from African countries. From 2004-2006, 456 men and women were interviewed from Toronto's Ethiopian, Kenyan, Somali, Tanzanian, and Ugandan communities. Univariate and bivariate analyses were used to characterize sexual behaviour (previous 12 months) and compare those reporting two or more sexual partners to those with one.

RESULTS: Of participants who reported ever having sex, 22% (76/352) had two or more sexual partners in the previous year. Of these, the distribution of the number of partners was as follows: two 50%, three 33%, and

four or more 12%. 81% (61/75) reported sex with at least one person born in Africa. 7% (5/72) of those with multiple partners reported no condom use in the previous year and 69% (50/72) inconsistent or imperfect use. 43% (32/75) reported sex with concurrent partners and 27% (18/66) reported their partner had concurrent sex partners; 14% (9/66) reported both they and their partner had concurrent sex partners. Compared to participants with one partner in the previous year (n=205), those with two or more partners were more likely to be men (36% vs. 17%, p <0.001), were younger (31.5 vs. 36.2 years, p <0.0001), had first sex at a younger age (17.2 vs. 19.0 years, p <0.001), were more likely to have 10+ lifetime sexual partners (40% vs. 16%, p <0.0001), and to report their partner having concurrent sexual partners (27% vs. 5%, p <0.0001).

CONCLUSIONS: Although the majority of EAST participants have had one or no sexual partners in the previous year, a non-negligible group with two or more partners reported sexual practices that may put them at substantial risk for HIV infection. This is concerning given these communities are disproportionally affected by HIV in Canada.

P194
STRESSFUL LIFE EVENTS AND UNPROTECTED ANAL INTERCOURSE AMONG MSM IN THE POLARIS COHORT

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OBJECTIVE: To determine whether stressful life events lead to increased sexual risk behaviour among MSM.

METHODS: Longitudinal analysis was conducted on a subsample of 287 MSM in the Polaris Cohort who had 2+ follow-up interviews. The 105 IV+ and 182 HIV– men completed 2,156 interviews (median of 8/person; range 3-14). Men self-completed a checklist of 35 stressful life events. Longitudinal logistic regression was used to analyse the effect of stressful life events reported at a given interview on the binary outcome "unprotected anal intercourse (UAI) with non-regular partners" reported at the subsequent interview. Results are reported as odds ratios (OR) with robust 95% confidence intervals (CI) adjusted for age, HIV status, and homosexual versus bisexual orientation.

RESULTS: The most common stressful life events were: major financial crisis (16%), romance ends (16%), increased arguments with partner (15%), problems with drugs/alcohol (14%), close relationship ends (12%), fired/laid off (7%), close friend died (10%), and serious illness (7%). Financial-related stressful events were followed by an increase in UAI [("major financial crisis" OR 1.6; 95%CI 1.1,2.2), "fired or laid off work" (OR 1.3; 95%CI 0.97,1.8)]; as did "ending of a romance" (OR 1.6; 95%CI 1.2,2.0), and drug and alcohol-related problems (OR 1.3; 95%CI 0.93,1.9). Conversely, the "death of a close friend" resulted in lower odds of UAI (OR 0.73; 95%CI 0.50,1.1), and "serious illness" lead to less UAI for HIV+ (OR 0.63; 95%CI 0.43,0.94) but not for HIV– (OR 1.7; 95%CI 0.94-3.1).

CONCLUSIONS: Previously we reported associations between stressful life events and increased risk of seroconversion. Current results indicate that the effects of stressful life events on sexual risk behaviour among MSM are complex. Interventions need to consider the nature and context of stress. Of concern in this economic climate is the impact of financial-related stress on increased sexual risk.

P195
THE CEDAR PROJECT: FOSTER CARE, 'JUVI', AND HEALTH RELATED VULNERABILITIES AMONG ABORIGINAL YOUNG PEOPLE WHO USE DRUGS IN TWO CANADIAN CITIES

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OBJECTIVE: Few studies have explored the HIV related vulnerabilities of young Aboriginal people who have been in youth detention. Our objective was to explore the demographic characteristics, traumatic life events, and drug and sex related vulnerabilities associated with youth detention among a cohort of young Aboriginal people who use drugs in two Canadian cities.

METHODS: The Cedar Project is an ongoing prospective cohort study of Aboriginal young people who use drugs, aged 14-30, in Vancouver and Prince George. This analysis uses baseline data collected by Aboriginal interviewers between 2003-2005. Univariate and multivariable logistic regression determined significant factors associated with youth detention at baseline.

RESULTS: Of the 605 participants, 248 (41%) had been in juvenile detention; 152 men (61.3%) and 96 females (38.7%). The median age of first incarceration was 14. 67% had been taken from their biological parents into care. Among females, 71% had been sexually abused and 79% had been involved in sex-work. In multivariate analyses, youth detention was independently associated with being male (AOR: 2.46; 95%CI: 1.7-3.57), ever injecting drugs (AOR: 2.04; 95%CI: 1.39-3), HIV positive antibody status (AOR: 1.93; 95%CI: 1.48-3.09), and ever having slept on the street for more than three nights (AOR: 1.75; 95%CI: 1.18-2.61).

CONCLUSION: A substantial proportion of young Aboriginal people struggling with drug dependency have also been in juvenile detention. This experience is associated with HIV seropositivity, homelessness and risky drug taking practices. Strategies for safe housing, harm reduction, and culturally relevant healing strategies are urgently needed.

P196
SMOKING INTENSITY AND ITS AFFECT ON LUNG FUNCTION IN HIV-INFECTED SUBJECTS

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OBJECTIVE: To examine the association between smoking intensity and lung function among HIV-infected subjects.

METHODS: In this cross-sectional study, we recruited consecutive consenting adults at the regional HIV clinic at McMaster University. Information on pack-year of smoking was collected by questionnaire. Lung function was measured as percent predicted (pp) FEV_1 (forced expiratory volume in one second).

RESULTS: 120 subjects participated, and 119 had acceptable spirograms. 94 (78%) were men, and 96 (80%) were white. Mean (SD) age was 43.4 (8.4) years. 64 (68%) men were ever smokers (currently smoking or formerly smoked), compared to 11 (42%) women (p=0.016). Mean pack-year of smoking was 24 for both male and female ever smokers (p=0.996). A history of bronchitis was present in 39 (33%) subjects, pneumonia in 47 (39%), asthma in 14 (12%), and emphysema in 1 (1%) subject. Asthma was newly diagnosed in 3 (3%) subjects and COPD in 3 (3%). 11 (9%) subjects had restrictive lung function. Current cough was present in 49 (42%) subjects, sputum in 52 (43%) and breathlessness in 9 (8%) subjects. Mean (SD) of $ppFEV_1$ was 92.8% (15.7%), which was significantly less than target value of 100% (p <0.001). Current smokers were consistently more likely to have cough and sputum than non-smokers; however cough and sputum were similar between non-smokers and former smokers. For every 10 pack-year increase, $ppFEV_1$ decreased by 2.2% (95% CI –3.8% to –0.6%) in male after controlling for asthma, restrictive lung function and race. However this association was not present in female.

CONCLUSIONS: We found smoking intensity was associated with worse lung function in male subjects. We might need more subjects to obtain the same finding in female. We also found subjects were less likely to have respiratory symptoms after quitting. Our findings reinforced the need for improved smoking cessation programs for HIV-infected subjects.

P197
EMERGENCE OF CRACK COCAINE AS A RISK FACTOR FOR HIV SEROCONVERSION AMONG INJECTION DRUG USERS IN VANCOUVER, CANADA

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BACKGROUND: In recent years, Canada has experienced an explosive increase in the use of crack cocaine, however, little is known about the possible role of crack on HIV incidence. This study sought to examine whether factors associated with HIV seroconversion have changed over the last decade coinciding with the increased use of crack.

METHODS: Data were derived from a prospective cohort study known as the Vancouver Injection Drug Users Study (VIDUS). HIV incidence observed over the 9 year study period was divided into two periods; representing the first 50 percent of HIV seroconversions observed vs. the

second 50 percent of HIV seroconversions. Two separate Cox regression models were constructed to identify independent predictors of HIV infection for each period.
RESULTS: Overall, 1,048 eligible injection drug users were enrolled into VIDUS between May 1996 and December 2005, among whom the use of crack increased during follow-up (Mantel-Haenszel test for trend p <0.001). Over the study period, 137 HIV seroconversions were observed. In multivariate analyses, daily cocaine injection was independently associated with HIV seroconversion in both Period 1 and Period 2. However, daily crack smoking (adjusted relative hazard = 1.87, 95% confidence interval: 1.11-3.15) only emerged as an independent predictor of HIV infection during Period 2.
CONCLUSION: The emergence of crack cocaine as a primary risk factor for HIV seroconversion points to the urgent need for an evidence-based public health response. Although controversial, innovative public health interventions with potential to reduce the spread of HIV among crack users should be prioritized for evaluation.

P198
ECONOMIC AND SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH THE NUMBERS OF PARTNERS OF FEMALE SEX WORKERS IN KARNATAKA, SOUTH INDIA

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OBJECTIVES: The spread of HIV at the population level depends on the sexual contact pattern. This study examines factors influencing the numbers of client partners of female sex workers (FSWs) in five districts in the South Indian state of Karnataka.
METHODS: Data were analyzed from a cross-sectional biological and behavioural survey of FSWs and clients in five districts in Karnataka, supported by the India AIDS Initiative of the Bill & Melinda Gates Foundation. Bivariate and multivariate negative binomial regression was used to examine the relationship between reported monthly numbers of client partners of FSWs (numbers of clients) and socio-demographic and economic factors, as well as sex work characteristics. Normalized weights were applied to account for sampling design.
RESULTS: There were 2,283 FSWs sampled. The distribution of the numbers of client partners was rightly-skewed (mean=38.7; variance=1988), and was highly heterogeneous between districts. There was a two-fold difference between the districts with the highest and lowest monthly average client partners per FSW (59.6 versus 24.3). In adjusted analysis, younger age was associated with higher rates of partner acquisition (p <0.005). Brothel-based and public-places-based FSWs had rates of client partner acquisition that were 1.7 and 1.2 times greater than for home-based FSWs. FSWs who reported illiteracy and who did not do other paid work had rates of partner acquisition that were 1.1 and 1.4 times greater than those who did (p <0.001).
DISCUSSION: Rates of client partner acquisition varied substantially across the five districts, even after adjusting for socio-demographic factors and sex work characteristics. Higher rates of client partner acquisition for FSWs not reporting other paid work suggests an economic dependence of women on sex work. Additional research should be directed towards characterizing specific sexual network and economic characteristics that influence the behavioural process of partner formation within each district.

P199
REGIONAL AND TEMPORAL CHANGES IN HIV-RELATED MORTALITY IN BRITISH COLUMBIA, 1987–2006

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BACKGROUND: HIV-related mortality has declined in the province of British Columbia (BC) since the introduction of highly active antiretroviral therapy (HAART); however, little is known about the regional differences in HIV-related mortality. BC has five geographically and demographically diverse health authorities (HA): HA1, HA2 and HA3 are comparatively small, densely populated regions, while HA4 and HA5 are vast geographic areas with numerous rural and remote communities and some large cities. The objective of this study was to characterize changes in HIV-related mortality between 1987 and 2006 by HA.
METHODS: Abstracted death certificate data were obtained from the BC Vital Statistics Agency for all HIV-related deaths among persons 19 years and older. Age-sex adjusted standardized mortality rates were calculated for each calendar year for each HA. Joinpoint regression analyses were used to model changes in the annual HIV-related mortality rates by HA over time.
RESULTS: A total of 3899 HIV-related deaths were reported in BC between 1987 and 2006, with 2550 (65.4%) in HA1, 458 (11.8%) in HA2, 622 (16.0%) in HA3, 194 (5.0%) in HA4, and 75 (1.9%) in HA5. All regions had a steady increase in HIV-related mortality rates between 1987 and the early 1990s. In 1993-1994, HA1, HA2, HA3, and HA4 had a steep decline in HIV mortality (p <0.01), temporally associated with introduction of two-drug antiretroviral regimens. After 1997-1998, HIV-related mortality leveled off, but continued to decline in HA1, HA2, and HA3 (p <0.01), coinciding with the introduction of HAART. However, in HA4 HIV-related mortality rebounded after 1997 (p <0.01), while HA5 had a steady increase in HIV mortality from 1987 to 2006 (p <0.01).
CONCLUSION: The regional trends in HIV-related mortality rates in BC will require further investigation to determine the possible reasons for the differences by HA.

P200
CLINIC OR PHYSICIAN REPORTS MAY UNDERESTIMATE DEATHS OF HIV-INFECTED INDIVIDUALS: IMPLICATIONS FOR COHORT-BASED RESEARCH STUDIES

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BACKGROUND: Estimates of mortality are vital to assess the impact of antiretroviral therapy. In cohort-based studies estimates of mortality are often based on physician (or clinic-based sites) reporting of deaths. In this analysis, we examine the rate of underreporting of deaths by clinic-based sites versus population-based reports (linking with vital statistics) of deaths among individuals enrolled in the HAART Observational Medical Evaluation and Research (HOMER) cohort.
METHODS: Our analyses included deaths among participants who initiated HAART and were enrolled in the HOMER cohort between August 1, 1996 and June 30, 2006, with follow-up until June 30, 2007. Deaths among participants enrolled in the HOMER cohort are routinely reported by clinic-based and through an annual record linkage with the British Columbia Vital Statistics death registry (population-based). Multivariate logistic regression was carried out to assess independent predictors of deaths reported by physicians.
RESULTS: Of the 3,112 participants included in the HOMER cohort, a total of 622 (20.0%) died over the 10-year follow-up period. Clinic-based sites reported 377 (60.6%) of the 622 deaths over the follow-up period; while annual linkages with vital statistics reported 597 (96.0%) of the observed deaths. In multivariate analysis, physicians were more likely to report deaths among participants with lower CD4 cell counts (odds rations [OR] 0.89, 95% confidence interval [CI] 0.82, 0.97) and higher HIV plasma viral loads (OR 1.40, 95% CI 1.05, 1.87). HIV-experienced physicians also were more likely to report deaths among participants (OR 1.02, 95% CI 1.01, 1.04). Reporting of deaths by physicians also increased over time (OR 1.20, 95% CI (1.13, 1.28).
CONCLUSION: In this study, clinic-based reporting underestimated mortality in our cohort by 40%. Cohorts relying only on physician reporting of deaths are potentially underreporting the total number of deaths among HIV-infected individuals.

P201
HIV INCIDENCE AND PREVALENCE AMONG ABORIGINAL PEOPLES IN CANADA: AN IN-DEPTH REVIEW OF THE SCIENTIFIC LITERATURE

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BACKGROUND: HIV infection is increasingly common within the

Aboriginal population in Canada, most notably among those that use injection drugs (IDUs), women, and young people. The objective of this review was to look at HIV incidence, prevalence, and the predictors of infection for Aboriginal people in Canada.
METHODS: MEDLINE, PubMed, the Cochrane database and the Canadian Association for HIV Research (CAHR) database were searched for abstracts and articles using the terms "HIV" or "HIV-1" and "Aboriginal" or "First Nations" or "Metis" or "Inuit" and "Canada". Additional articles were retrieved from bibliographic references, a publications list compiled by the Cedar Project Partnership, and a government published inventory.
RESULTS: A total of 108 papers were reviewed, of which 30 had incidence and/or prevalence data and a further six reported independent determinants of infection. Aboriginal drug users had higher HIV incidence rates (range 5·3%-21·8%) than non-Aboriginal drug users (range 6·4%-10·7%). HIV prevalence ranged from 0%-38·0% for Aboriginal people and 1·0%-20·8% for non-Aboriginal people. Aboriginal ethnicity was found to be a predictor of HIV status for drug users and mother-to-child transmission, but was not significant for the other groups studied. Predictors of HIV status within Aboriginal populations included frequent IDU and high-risk drug use practices. Several geographic and social factors were also identified as predictors of HIV status specifically for Aboriginal people.
CONCLUSIONS: More research is needed to fully characterize the HIV epidemic among Aboriginal peoples in Canada. Current prevention strategies, especially those targeting drug users, are failing to effectively reach Aboriginal populations. Hence, innovative interventions focusing on the unique cultural needs of this group are urgently required.

P202
MABWANA BLACK MEN'S STUDY: HIV TESTING AMONG BLACK MEN WHO HAVE SEX WITH MEN (BMSM) IN ONTARIO

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BACKGROUND: The African and Caribbean Council on HIV/AIDS in Ontario voiced a need for knowledge about the HIV risks and the increasing prevalence of HIV among BMSM. The MaBwana Black men's Study was developed as a Community-Based Research study to improve the understanding of BMSM communities and networks in Toronto.
METHODS: Respondents completed a self-administered questionnaire between June 2007 and January 2008. Recruitment was done mostly during events in Toronto, or through postcards and personal contacts with trusted sources. The questionnaire solicited information on demographics, sexual behaviour, community affiliation, and HIV testing. Some respondents were also invited to an in-depth face-to-face interview to explore the meaning of HIV testing and risk associated with HIV.
RESULTS: 168 men were recruited. Over half of the men were under 31 years (range 18-61). 144 men had previously tested for HIV (19 had not) of which 71 had recently tested. 75% were HIV negative. Based on the 125 cases available for analysis, the following variables were correlated to "ever tested for HIV": Having anal sex with Black men, having friends or family living with HIV, having friends or family who died from AIDS, being born outside of Canada, going to gay bars, being 21 years or younger, having a gay sexual identity, and recent arrival in the GTA. In logistic regression analysis having anal sex with black men (OR 5.2; 95%CI 1.5 - 17.9) and having friends or family living with HIV (OR 3.7 95% CI1.02 - 13.3) were associated with ever testing for HIV. Also, being under 30 years old (OR 4.6; 95% CI1.7 - 12.7) and having disclosed a sexual orientation to someone (OR 2.6; 95%CI 1.04 - 6.3) were associated with recent (1 year ago) HIV testing. Participants mentioned three main reasons for HIV testing: to fulfill immigration requirement, possible exposure to HIV from unprotected sex, and AIDS activism.
CONCLUSIONS: HIV testing seems to be prevalent among BMSM. However, more HIV interventions targeting BMSM of all age including anti-homophobia training are still needed.

P204
FERTILITY DESIRES OF WOMEN LIVING WITH HIV IN SOWETO, SOUTH AFRICA: IS HAART INFLUENCING FERTILITY DECISION-MAKING?

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BACKGROUND: Advances in HIV treatment have dramatically increased life expectancy, decreased morbidity, and reduced the risk of vertical and horizontal transmission, thereby reducing barriers to reproduction among HIV-positive women. It is currently unknown whether improved access to highly active antiretroviral therapy (HAART) will influence fertility decision-making of HIV-positive women in high HIV prevalence settings.
METHODS: We used cross-sectional data from an interviewer-administered survey to estimate the association between HAART use and fertility desires, between May and December 2007. Among 468 women (18-44 years) recruited from the Perinatal HIV Research Unit (PHRU) in Soweto, South Africa, 225 were current HAART users (median duration of HAART use = 30.6 months [IQR= 27.6, 33.2]) and 234 were HAART-naïve. A medical record review was conducted to confirm clinical variables. Multivariate logistic regression was used to estimate the association between HAART use and fertility desires.
RESULTS: The average age was 33 years [SD=5.4], 63% had not completed highschool, and 59% were unemployed. 10% of women were currently married and 74% reported being in a sexual relationship. Median parity was 2.0 [IQR 1.0, 3.0]. Mean CD4 cell count (cells/mm3) in HAART users was 400 [SD=213] and 356 [SD=200] in non-HAART users. Overall, 28% reported fertility desires, with minimal differences between HAART-users and non-users (29% and 27%, respectively). After adjustment for confounders, women on HAART were no more likely to report fertility desires than HAART-naïve women (AOR: 1.33; 95% CI: 0.84, 2.11). However, women who were younger, had lower parity, and were in a sexual relationship were more likely to report fertility desires.
CONCLUSION: A substantial proportion of women living with HIV desire children, largely irrespective of HAART use. As HAART access expands, integrated HIV and reproductive health services must be made available to support the rights of HIV-positive women to safely achieve their fertility goals.

P205
WITHDRAWN

P206
MANCOUNT 2008: THE FEASIBILITY OF INCLUDING SELF-COLLECTED ANAL SWABS IN THE M-TRACK SECOND-GENERATION HIV SURVEILLANCE SYSTEM

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BACKGROUND: Incorporation of additional biological specimens for other pathogens into second-generation HIV surveillance systems allows for estimation of co-infection and associated risk and demographic variables. MSM have a high prevalence of rectal HPV and increased rates of anal cancer, particularly HIV-positive MSM, and the prevalence of rectal sexually transmitted infections (STI) such as chlamydia and gonorrhea is poorly described. We assessed the feasibility of including a self-collected anal swab in M-Track.
METHODS: Participants self-completed a survey (e.g. demographic, risk, and medical information) and provided a dried blood spot (DBS) for HIV testing. Participants completing the survey and a DBS were asked to self-collect an anal swab using the ThinPrep (PreservCyt) specimen collection system according to a previously validated method (Lampinen et al., 2006) either on-site at the venue, or by presenting to a community clinic/agency and requesting a self-collection kit.
RESULTS: Between September 9 and December 9, 2008, a total of 375 participants completed a DBS. Among these participants, 133 (35.5%) agreed to self-collect an anal swab. The majority of participants provided a specimen on-site; however, this was not possible at all venues. Of the 7 participants (4.8%) electing to present to a community clinic/agency, 2

(28.6%) followed through and provided a specimen. Specimen collection will continue through February 2009.
CONCLUSIONS: The feasibility of recruitment of MSM in community venues for self-collection of anal swabs as part of a secondary HIV surveillance system has been demonstrated. Optimal participation is achieved when participants are able to provide a specimen on-site, and future studies should focus on identifying venues where self-collection of anal swabs on-site is possible.

P207
MANCOUNT 2008: PRELIMINARY RESULTS FROM THE VANCOUVER M-TRACK STUDY

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BACKGROUND: M-Track is a second-generation surveillance system designed to monitor the prevalence of HIV and other sexually transmitted infections (STI) and associated risk factors in men who have sex with men (MSM) in urban centres in Canada.
METHODS: Participants were recruited through community venues (e.g. bars, bath houses, community associations, local events) and asked to self-complete a survey (e.g. demographic, risk, and medical information) and provide a dried blood spot (DBS) for testing of HIV and other STI. The survey was developed by the Public Health Agency of Canada and revised locally with the contribution of the community advisory committee.
RESULTS: Between August 1 and December 20, 2008, 24 venues were visited a total of 92 times. There were an estimated 5386 eligible individuals at these venues, of which 1994 (37.0%) were contacted. Among those contacted, 733 (36.8%) participated in the survey, and 725 (99.0%) also provided a DBS. Reasons for not participating included not having enough time (423 [33.5%]), not wanting to participate in research (177 [14.0%]), not wanting to provide a DBS (151 [12.0%]), having already participated (123 [9.8%]), and others or unattained reasons (387 [30.7%]). The median age among participants was 35 (interquartile range [IQR] 27, 45), 676 (92.2%) lived in Vancouver, 607 (82.8%) had graduated from high school, and 387 (41.9%) had an annual income of greater than $30,000. Among the 658 reporting sexual identity, 542 (82.4%) identified as gay, 65 (9.9%) identified as bisexual, 5 (0.7%) identified as straight, and 46 (7.0%) identified as other. Study recruitment will continue until the end of February 2009.
CONCLUSIONS: To date survey recruitment has been successful in community venues in Vancouver. Participant characteristics and prevalence of HIV and STI and associated risk factors among the entire sample will be presented at the time of the proceeding.

P208
INCREASED CLINICAL EVENTS IN HIV-INFECTED PATIENTS WHO ACHIEVE FULL VIROLOGIC SUPPRESSION BUT FAIL TO ATTAIN A CD4 COUNT ≥ 200 CELLS/MM^3 AFTER TWO YEARS OF COMBINATION ANTIRETROVIRAL THERAPY (CART)

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BACKGROUND: The prognostic impact associated with a lack of immune reconstitution (CD4 >200c/mm^3) despite virologic suppression (VL <50c/mL) following cART remains unclear. Our study's purposes were to determine if this discordant state results in more clinical events and predictors of this state.
METHODS: ART-naive HIV-positive individuals in the CANOC Collaboration who started cART after 31/12/1999 and achieved a VL <50c/mL on three sequential occasions within two years of cART were included in the analysis. Multivariable Cox-proportional hazards regression was used to model time to death or development of an AIDS-defining illness after two years of starting cART. Covariates of interest included the CD4 count at two years and whether the two-year CD4 count was <200c/mm^3. Events were the first of AIDS or death before any rise of VL≥50c/mL, while non-events were censored at VL≥50c/mL or last contact date ≤09/2008. Predictors of not achieving a two-year CD4 count ≥200c/mm^3 were determined using multiple logistic regression.
RESULTS: 1082 individuals with a median follow-up of 42 months (IQR 31,56) were analyzed. 36 clinical events occurred after two years of cART. IDU (aHR=2.88.; p=0.003) and two-year CD4 <200c/mm^3 (aHR=2.72; p=0.01) were associated with clinical events after two years of cART. Baseline VL and CD4 count were not significant: (HR=1.23; p=0.62) and (HR=0.96; p=0.82), respectively. Significant predictors for two-year CD4 count <200c/mm^3 were: baseline CD4 count (OR=0.34 per 100 cells/mm^3; p <0.001), hepatitis C status (OR=3.43; p <0.001) and 3rd agent (p=0.03); initial NRTI pair was not significant.
CONCLUSIONS: In our study population, HIV-infected patients taking cART who achieve complete viral suppression but fail to have a CD4 cell increase above the desired target of ≥200c/mm^3 have an increased rate of clinical events after two years, confirming the clinical significance of the immunologic discordant state. Our study event rate was low and verification with a larger sample would be beneficial.

P209
TIME TO VIROLOGIC SUPPRESSION AMONG HIV-INFECTED INDIVIDUALS ON HAART IN CANADA

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BACKGROUND: Socio-demographic and clinical circumstances may prevent individuals living with HIV from achieving virologic suppression. The aim of this analysis is to investigate factors associated with virologic suppression among a national cohort of individuals on HAART in Canada.
METHODS: Individuals included in this study had HIV-1 plasma viral load (VL) and CD4 measurements within 6 months of beginning therapy. Univariate and multivariate analyses were done using piecewise survival exponential models where time scale was divided into intervals (<10 months and ≥10 months), where hazard was assumed to be constant within each interval but may vary across the intervals. Virologic suppression was defined as the time to the first of at least 2 consecutive HIV-1 plasma VL measurements below 50 c/mL.
RESULTS: 2463 individuals that began HAART after 12/31/1999 were included. The median age was 40 years (IQR 33-47), 76% were male, 17% MSM, and 21% had a history of IDU. The estimated probability of virologic suppression by 6 months was 52.7%. The median time to suppression was 4.4 months (IQR 2.8-8.1). In multivariable analyses adjusting for age, baseline CD4, AIDS at baseline, women ([HR] 0.84, 95% [CI] 0.75-0.95) and individuals with a history of IDU (HR 0.61, CI 0.54-0.69) were less likely to suppress. Patients using 2 NRTIs+NNRTI or 2 NRTIs+ boosted PI were 1.45 (CI 1.23-1.71) and 1.58 (CI 1.33-1.87) times more likely to suppress than those using 2 NRTIs+unboosted PI. Patients on 3 NRTIs had similar risks of virologic suppression as patients on 2 NRTIs + unboosted PI. Patients with lower VL were more likely to suppress (<3 log10 c/mL [HR 1.46, CI 1.06-2.02], 3 - <4 log10 c/mL [HR 1.90, CI 1.59-2.28] and 4 - <5 log10 c/mL [HR 1.36, CI 1.23-1.51]) than patients with baseline VL > 5 log10 c/mL.
CONCLUSION: Individuals on boosted PI regimens or NNRTI regimens were more likely to suppress than patients on unboosted PI regimens. Women and individuals with a history of IDU were less likely to achieve virologic suppression.

P210
WITHDRAWN

P211
REGIONAL DIFFERENCES IN RATES OF VIRAL LOAD TESTING IN CANADA CANOC COLLABORATION

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BACKGROUND: Frequency of viral load (VL) measurement can indicate quality of care for HIV-infected individuals. This analysis examines if regional and individual characteristics are associated with differential use of VL testing in Canada.

METHODS: Generalized Estimating Equation regression models were used to examine the relationship between fixed and time-varying covariates, the number of days between VL tests, and the occurrence of an interval of 6 or 9 months or more between tests.

RESULTS: 2073 individuals from Ontario, Quebec and BC who started HAART after 12/31/1999 were included in the analysis with a median follow-up of 37.8 months (IQR 18.5, 60.8,) and a median of 14 VL tests (IQR, 9,20). The median age was 40 (IQR, 34, 47), 77% were male, 50% Caucasian, 20% MSM, 21% IDU, and 12% heterosexual. Overall, the median number of days between tests was 72 (IQR 42-99), and by province was Ontario: 89 (IQR 56, 105), Quebec: 81 (IQR 48, 113), and BC: 68 (IQR 40, 97). Of 29,626 intervals between VL tests, 5.9% were >6 months and 2.2% were >9 months. In multivariate analyses, gaps in VL testing (>9 months), were less likely in BC (OR = 0.37, $p < .0001$) than other provinces, among older individuals (OR = 0.78 per 10 years, $p < .0001$), among MSM (OR = 0.67, $p = .01$), for tests in the first year of initiation of HAART (OR = 0.19, $p <.0001$); but more likely among individuals not on ARVs at the time of VL measurement (OR = 5.9, $p <.0001$), and among IDU (OR = 1.71, $p <.0001$).

CONCLUSIONS: IDU, younger individuals, residents of Ontario or Quebec, individuals who were not taking any ARVs at the current VL test and individuals with at least one year of HAART were more likely to have a 9 month gap in VL testing even when VL testing is available at no cost.

P212
MANCOUNT 2008: A PROFILE OF FISTING (BRACHIOPROCTIC EROTICISM) AMONG MEN WHO HAVE SEX WITH MEN (MSM) IN VANCOUVER

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BACKGROUND: Long ruled as insalubrious by health practitioners, the sexual conduct of receptive and insertive fisting among MSM remains poorly understood, and thus appears clandestine and unclear in the literature. We investigated fisting in the M-Track, a second-generation surveillance system designed to monitor the prevalence of HIV and other sexually transmitted infections (STI) and associated risks among MSM in Vancouver.

METHODS: In addition to a series of socio-demographic, drug use, partner-related, and health care access questions, participants were asked questions about sexuality, including whether or not they been fisted by a partner in the past 6 months. We examined the prevalence and factors associated with a positive response to having been fisted by a partner in the past 6 months using bivariate and multivariate logistic regression techniques.

RESULTS: Between August 1 and December 20, 2008, a total of 733 participants were recruited. Among these individuals, 33 (4.5%) had been fisted by a partner in the past 6 months. In multivariate analysis, individuals who had been fisted were more likely to: look for sex in public sex environments (odds ratio [OR] 2.64, 95% confidence interval [CI] 1.20-5.83), pre-coitally douche (OR 2.94, 95% CI 1.28-6.79), and use sex toys in ano (OR 7.15, 95% CI 5.79-8.35), when compared to individuals who had not been fisted in the past 6 months.

CONCLUSIONS: Receptive fisting is sexual behaviour long concealed and marginally researched but clearly associated with risk and these data associating factors such as public sex environments, pre-coital hygiene, and using sex toys may inform development towards harm reduction inreach and outreach among MSM.

P213
PILOT STUDY OF THE FACTORS IMPACTING IRON DEFICIENCY ANEMIA IN HIV-POSITIVE WOMEN

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BACKGROUND: Iron deficiency anemia (IDA) is one of the most common co-morbidities in women with HIV. Although risk factors of IDA have been identified, dietary iron intake has not been well-studied. The objective of this pilot study is to determine baseline characteristics, dietary iron intake and composition, and the importance of community based-screening for IDA in this population.

METHODS: An ongoing pilot study is designed to enroll 100 HIV-positive women, aged 19 to 50 years, by May 2009 from Vancouver acute and community care. Dietary iron intake is collected through an iron-specific food checklist. IDA is diagnosed based on hemoglobin (Hgb) concentration below 120 g/L, mean corpuscular volume (MCV) <80 fL, and transferrin saturation (tsat) <16%.

RESULTS: To date, 10 subjects have been recruited, 9 of whom have a history of injection drug use. Preliminary results show that 90% have IDA, with mean Hgb 109 g/L, MCV 86.1 fL, ferritin 188 mcg/L, and tsat 11%; 70% have body mass index <20; 60% have a CD4 count of <150 /mm^3; and 70% have amenorrhea. All of the participants have inadequate food access. Only one participant takes iron supplements, 90% do not meet their daily iron requirements of18mg/d (mean iron intake 11.00 mg/d), and 30% have very low dietary iron intakes (<8.1 mg/d). Breads and cereals comprise over 50% of the diet, while high iron foods (meats) comprise only 12%.

CONCLUSION: HIV positive women in our study have a high prevalence of IDA and significant food insecurity, which, in turn, worsens nutritional status and health outcomes. This ongoing study aims to demonstrate that a stronger nutritional focus on screening and therapeutic management of IDA in this population is warranted.

P214
UNPROTECTED ANAL INTERCOURSE (UAI) WITH CASUAL SEX PARTNERS CLUSTERS WITH OTHER RISK BEHAVIOURS AMONG MEN WHO HAVE SEX WITH MEN (MSM): RESULTS FROM THE *LAMBDA* STUDY

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OBJECTIVES: To examine the prevalence and determinants of unprotected anal intercourse (UAI) with casual sex partners known to be HIV-positive or of unknown HIV-status in a community-based sample.

METHODS: The *Lambda* study was a cross-sectional, venue-based survey which recruited men in Toronto and Ottawa. It was the Ontario component of the 2007 M-Track study. Socio-demographic characteristics, behaviours and HIV/STI knowledge were collected using a standardised, self-administered questionnaire. Dried blood spots were collected and tested for HIV and HCV. Logistic regression was used to identify relevant variables associated with UAI.

RESULTS: A total of 2,438 participants took part in the *Lambda* survey. Reported UAI encounters (insertive, receptive or both) were similar in Toronto and Ottawa. Among men who reported UAI with casual sex partners in the previous six months, 63.2% (n=294) reported UAI with casual sex partners of unknown positivity and 35.7% (n=163) with casual sex partners known to be HIV-positive. Of these, 60.3% (n=94) and 32.6% (n=31) were HIV-negative. Neither alcohol consumption in the two hours prior to sex nor injection drug use were associated with UAI with these casual sex partners. However, non-injection drug use among HIV-negative men was associated with UAI with casual sex partners known to be HIV-positive (OR=4.1; 95%CI: 1.3-14.5).

CONCLUSION: This analysis demonstrates UAI with casual sex partners is a contributor to the high HIV-incidence among MSM in Ontario. While this analysis cannot determine whether non-injection drug use precedes unsafe sexual behaviour or is a marker for risk taking in general, the knowledge that higher risk behaviours appear to cluster together can be used to inform intervention programs. Further study is needed to help understand the factors and circumstances that contribute to choosing risk over safety in the context of UAI.

P215
DELAYED CONDOM APPLICATION DURING RECEPTIVE ANAL INTERCOURSE (DCA-R) AMONG MEN WHO HAVE SEX WITH MEN (MSM): RESULTS FROM THE *LAMBDA* STUDY

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OBJECTIVES: To investigate the prevalence and determinants of delayed condom application during receptive anal intercourse (DCA-R) in a community-based sample.
METHODS: The *Lambda* study was the Ontario component of the 2007 M-Track study. Men were recruited from Toronto and Ottawa for this cross-sectional, venue-based survey. A standardized, self-administered questionnaire was used to collect information on socio-demographic characteristics, behaviours and HIV/STI knowledge. Dried blood spots were collected and tested for HIV and HCV. Polytomous logistic regression was used to investigate relevant variables associated with DCA-R.
RESULTS: A total 2,438 participants took part in the *Lambda* study. With respect to DCA-R, participants from Toronto and Ottawa were similar. Among participants who reported sex in the previous six months, DCA-R on more than one occasion was reported by 32.0% (n=460). An additional 15.1% (n=217) reported a single episode of DCA-R, for a total of 46.8% (n=677). Of HIV-negative participants, 30% (n=155) reported DCA-R on more than one occasion. Socio-demographic characteristics including, age, personal income, ethnicity and country of birth were not found to be associated with DCA-R. Participants reporting delayed condom application also reported other unsafe sexual behaviours. HIV-prevalence among those reporting more than one DCA-R encounter was 29.9% (n=66) compared to 14.3% (n=47) and 15.6% (n=15) for those who reported no DCA-R or one encounter.
CONCLUSION: The high proportion of HIV-negative participants reporting DCA-R indicates that DCA-R is an important factor with respect to population level risk of HIV-infection among MSM in Ontario and should be targeted by prevention initiatives. Factors associated with DCA-R on one occasion may not be the same as those for DCA-R on more than one occasion. Further research should be conducted to understand the motivations for and context of DCA-R and how it may differ from other unsafe sexual behaviours.

Epidemiology and Public Health – Evaluation of Behavioural and Biomedical Interventions to Prevent HIV

P216
DESTINY, DISEASE AND DESIRE: UNPACKING THE RESULTS OF A SCHOOL-FAITH-BASED HIV INTERVENTION

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OBJECTIVES: The vision of the iThemba Lethu school-faith-based programme in Durban, South Africa, is "to restore the destiny to children whose future is at risk of being negatively impacted by HIV/AIDS... by reducing their risk taking behaviour." Components include a classroom curriculum, youth clubs, holiday workshops, and parent and teacher programming. This paper explores its impact on youth risk behaviours.
METHODS: Eleven focus group discussions (n=104) were held with parents, teachers, students and programme facilitators to understand how and why participants perceived the intervention to work. Self-administered questionnaires informed by the Theory of Planned Behaviour were distributed to Grade 11 learners in 2 high schools with high numbers of learners that had been exposed to the intervention (N=369 ; 201 exposed; 168 controls).
RESULTS: Qualitative analyses revealed that all were overwhelmingly positive about the intervention and recognized it for providing much needed material, social and spiritual support to the community. Regression analyses showed that being older and male increased the likelihood of having ever engaged in penetrative sexual activity. Those youth exposed to iThemba Lethu were less likely to report having engaged in penetrative sex; this effect was marginally stronger for boys. Youth who were female or who had been exposed to iThemba Lethu reported lower intentions to have sexual intercourse in the next three months, and the effect of the intervention on reducing intentions to have sex was stronger for boys than for girls. Controlling for age, those youth who were male and those who were exposed to iThemba Lethu reported more negative attitudes towards condoms.
CONCLUSION: The program remains a beloved one for the community. In the face of overwhelming structural barriers of poverty and gender inequalities, however, interventions based on psycho-social behaviour change models face an uphill battle.

P217
THE IMPACT OF PARALLEL HAART AND CONTRACEPTION SERVICE PROVISION ON ELECTIVE TERMINATIONS OF PREGNANCY IN SOWETO, SOUTH AFRICA

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BACKGROUND: HIV disproportionately infects women of reproductive age in South Africa. Despite low stated fertility desire, unplanned pregnancies occur in women receiving Highly Active Anti-Retroviral Therapy (HAART).
METHODS: Between August 2004 and March 2008, a retrospective review of 1170 adults who initiated HAART at the Perinatal HIV Research Unit in Soweto, South Africa was performed. All women receiving HAART during this period were considered for review, resulting in 886 (76%) eligible women. Contraception, and pregnancy outcomes were recorded. In April 2006, an onsite contraceptive service offering barrier, oral and injectable methods was introduced. A descriptive analysis was performed and TOP proportions before and after contraceptive service provision were compared.
RESULTS: One hundred and seventeen pregnancies were recorded between August 2004 and March 2008. Contraception was ascertained in 113 women prior to pregnancy. Forty women (35%) used no contraception, 61 (54%) used male condoms only, six (5%) used injectables and six (5%) used oral contraception. Mean conception age was 31 years and median gravidity was three. Thirteen women had two pregnancies, and no women had more than two pregnancies. In the 20 months before onsite contraception services, 692 women initiated HAART; 57 (8%) delivered and 18 (32%) chose a TOP. In the 23 months after the contraception service, 886 women initiated HAART; 60 (7%) delivered and 12 (20%) chose TOP. There is no statistically significant difference in TOP proportions (p=0.1517).
Of the 30 (26%) TOPs, 7 (23%) women used no contraception, 21 (70%) used condoms only and 2 (7%) women used injectables.
CONCLUSIONS: Despite the introduction of onsite contraceptive services, unwanted pregnancies continue in women on HAART, reflected by high numbers of TOPs. Contraceptive counselling is recommended at every HAART visit, emphasizing female-controlled methods, dual contraception, and consistent correct condom use.

P218
GENDER, SOCIAL NORMS, ATTITUDES AND SEXUAL RISK OUTCOMES AMONG SECONDARY SCHOOL LEARNERS: EVIDENCE FROM A LOW-INCOME URBAN COMMUNITY IN KWAZULU-NATAL, SOUTH AFRICA

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BACKGROUND AND OBJECTIVES: Young people, and young women in particular, remain at high risk for HIV infection due to a complex combination of social, cultural, economic, psycho-social and biological factors. We present the results of a study, which explores how gender moderates the effects of social norms and attitudes toward sex on selected risk behaviour outcomes among secondary school learners in KwaZulu-Natal.
METHODS: We distributed self-administered questionnaires (N=809) to Grade 11 learners in 4 peri-urban schools in Durban, KwaZulu-Natal, South Africa. The questionnaire was informed by a Theory of Planned Behaviour conceptual framework and asked questions probing beliefs, attitudes, norms

and intentions regarding sexual behaviour and self-efficacy.
RESULTS: Significant differences between male and female learners were detected with respect to sexual risk profiles. Approximately 70 per cent of male learners and 46 per cent of female learners had experienced sexual debut. In a multivariate analysis, being female (OR= .533) and being exposed to an HIV prevention intervention (OR= .686) were significantly associated with not having sexually debuted. Having been hit or punched by a partner in the past (OR= 2.207), perceiving that peers are having sex (OR= 1.289) and having negative views of abstinence (OR= 1.404) were positively associated with sexual debut. In multivariate interaction models, however, gender significantly changes the effects of a number of norms and attitudes relating to sex in the next three months and to sex before marriage.
CONCLUSION: Sexual risk profiles are significantly different between young men and women. Gender influences a number of other factors and, in particular, perceived social norms around sexual behaviour. These findings suggest that the relationship between gender and HIV risk is more complex than often conceptualized and is strongly associated with a combination of structural and psycho-social factors.

P219
"VOLUNTEER FATIGUE" AND THE FUTURE OF HIV VACCINE EFFICACY TRIALS: PARTICIPANT REACTIONS TO THE STEP STUDY SHUTDOWN

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OBJECTIVES: We explored experiences and perspectives of participants in the STEP Study HIV vaccine trial regarding the trial shutdown in late 2007, their willingness to participate (WTP) in future trials, and implications for HIV vaccine research.
METHODS: We conducted in depth, semi-structured one-hour interviews with STEP study participants (n=15) and key informant service providers and clinical trialists (n=5). Interviews were digitally recorded, transcribed and uploaded into NVivo. We analyzed transcripts using narrative thematic techniques derived from grounded theory. Triangulation of data sources (participants, key informants) and investigators (2 researchers independently coded transcripts) enhances trustworthiness of the findings.
RESULTS: Participants (14 MSM, 1 woman; mean age = 41 years; 13 white, 2 Aboriginal) expressed disappointment regarding lack of efficacy of the experimental vaccine. Reactions to learning of heightened HIV susceptibility among a subset of volunteers who received the trial vaccine included shock, anger and fear, particularly prior to unblinding. Impressions of the STEP Study and WTP in future trials were influenced by: 1) perceptions of the communication of trial results; 2) assessment of the informed consent process; 3) trust in the STEP study; and 4) perceived ethical conduct of trial researchers. Participants reported dissatisfaction with perceived delays in communication of interim trial results. Despite high comprehension and comfort with information provided at the time of consent, participants recommended clearer explanation of potential risks. Most expressed high confidence in researchers; for some, trust in clinical trials was compromised.
CONCLUSIONS: Key recommendations for future HIV vaccine trials include improving communication, transparency and dissemination of results. "Volunteer fatigue" may be less a function of the number of trials that don't result in an efficacious vaccine and more an outcome contingent on the effectiveness of community engagement, communication with trial participants, and fostering trust between clinical trialists and communities at greatest risk for HIV infection.

Epidemiology and Public Health – HIV/AIDS Surveillance, Monitoring and Evaluation, Mathematical Modelling

P220
SELF-REPORTED HIV TESTING BEHAVIOURS AMONG QUEBECERS OF HAITIAN ORIGIN

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OBJECTIVE: To document HIV testing behaviours among Quebecers of Haitian origin (QHO) who have the highest HIV prevalence among immigrant groups in that province.
METHODS: Between May 2007 and September 2008, we conducted a voluntary, anonymous study among Quebecers aged 15 to 49 years born in Haiti or with at least one parent born in Haiti. Subjects were recruited at general practice clinics in Montreal. For this analysis we selected participants ever reporting heterosexual sex and who either actively requested HIV testing (defined as deciding themselves to get tested or in consultation with their partner) or were never tested for HIV (n=297). We used Chi-square tests and multiple logistic regressions to examine factors associated with never having been tested for HIV (NHBTH).
RESULTS: Among the 297 selected participants, 41.1% were males, mean age was 29.0 years and 42.6% were born in Canada. There were 169 participants (56.9%) identified as NHBTH. Variables significantly associated with NHBTH in univariate analysis and retained in the final multivariable model were age (<30 years: 62.5%; 30 or older: 48.8%), self-reported level of knowledge regarding HIV testing (not very well informed: 62.6%; very well informed: 48.7%) and marital status (married or common law: 64.1%; other: 53.5%). NHBTH did not vary according to gender (males: 60.0 %; females: 54.7%), number of occasional partners (None: 55.3%; 1+:59.8%) and migrant status (first generation: 56.3%, second generation: 57.6 %). In multivariate analysis, NHBTH was more likely among younger study participants (AOR: 1.94, CI: [1.13-3.32]), participants not very well informed on HIV testing (AOR: 1.65, [1.00-2.74]) and married participants or those in a common law relationship (AOR: 2.15, [1.19-3.88]).
CONCLUSIONS: We need to further characterise QHO groups who have not been tested. Interventions aiming at increasing HIV risk awareness and active requests for HIV testing are warranted especially among younger individuals.

P221
COMMUNITIES – THE KEY MESSENGERS OF CHANGE IN HIV PREVENTION AND CARE OF PERSONS INFECTED/ AFFECTED BY HIV/AIDS – TASO EXPERIENCE

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Mbale, Uganda

ISSUE: The AIDS Support Organisation (TASO) is one of the key organizations in Uganda that have taken lead in addressing HIV/AIDS issues. TASO Mbale is one of the 11 TASO service delivery centers, has grown from 207 clients in 1990 to 23,403 in 2008. 75% of the clients live beyond 11km from the facility. Communities have been involved by TASO to address stigma and access of communities to basic HIV/AIDS information and first level care.
DESCRIPTION: TASO Mbale has registered 12 communities operating in different districts. One of the centre's core activities is training and conducting refresher courses for community workers and care providers to enable them carry out HIV/AIDS education, awareness campaigns, home care, referrals, monitor adherence and sexual behavior.
On average, communities have recorded 908 people educated on HIV/AIDS, 83 AIDS talk shows, 10 newly registered clients, 92 referrals, 15 clients giving testimonies, 40 clients cared for at home, 131 clients counseled, and 1 Drama show per month in 2008.
LESSONS LEARNED:
- Involving communities, building and strengthening their capacity, networking and collaboration with other partners has eased service

accessibility and reduced service related costs incurred by TASO when offering a service at a client's home.
- Community involvement has helped to confront stigma/ discrimination, and clients are able to make informed decisions.
- Interactions between community volunteers and clients has promoted disclosure of sero-status in communities.
- Clients can have good adherence to drugs when there is a strong community and family support extended to them.
- Building the capacity of communities enhances willingness to participate and own community programs.

RECOMMENDATIONS: Strengthening capacity building at community level, partnership and networking, motivation, and streamlining of the referral systems will foster the community response in the drive towards HIV prevention.

P222
THE IMPORTANCE OF INFORMATION TECHNOLOGY IN ENHANCING STAFF PERFORMANCE MANAGEMENT AND QUALITY IN HIV TREATMENT AND CARE

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Mbale, Uganda

ISSUE: Target setting is vital in HIV/AIDS programming. Traditionally, Monitoring and Evaluation findings are normally reported on at the end of a reporting period. In TASO Mbale, it was observed that some program targets were not achieved by the reporting time and it's too late to reverse the situation thereafter. Through discussions with supervisors, it was observed that in order to organize effectively for programs, staff needed to regularly monitor their activities within workplan.

DESCRIPTION: A self monitoring system was designed and installed at TASO Mbale in 2007 which facilitates staff to monitor and evaluate their performance at any time. It enables them to monitor the quantifiable and un-quantifiable work done during a specified period. It tracks errors that are made during execution of work. This system is computer based and accessible on any networked computer at TASO Mbale. Each staff has a code used to access his/her performance in a specified period.

LESSONS LEARNED:
- Regular monitoring causes increased awareness of ones' performance vis-à-vis set targets which leads to increased self-drive and improved planning.
- Documentation of activities implemented has improved since the system was introduced. A notable increase in the counseling sessions per counselor from 813 in 2006 to 1134 in 2008 and an improvement in quality of counseling output was observed. Well as in medical, there was no significant change in quantitative output; however there was much improvement in the quality of medical services offered.
- Prompt identification and resolution of errors has resulted into to improved quality of work and services offered to clients.
- There was an increased home visits per counselor from an average of 86 in 2006 to 130 in 2008. Thus, the system can be used as in a service provider initiated follow-up approach with clients at their homes.

NEXT STEPS: To enhance outputs amongst HIV service providers and improve quality of HIV treatment and care, there is need for provider initiated self monitoring systems.

P223
HIV DRUG RESISTANCE TESTING: WHO IS GETTING TESTED AND WHO ARE WE MISSING?

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BACKGROUND: HIV drug resistance testing is promoted as part of routine clinical practice in HIV/AIDS treatment and care. This procedure is essential to HIV management. Our objective is to determine who gets tested and who is being missed, in a cohort of HIV-positive persons on HAART.

METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV-positive persons on HAART in British Columbia (BC). Data was collected through an interviewer-administered survey. Clinical data was assessed through a linkage with the Drug Treatment Program at the BC Centre for Excellence in HIV/AIDS. Bivariate and multivariate analyses were performed to identify independent associations between the explanatory variables and the probability of getting tested. Our analyses assessed whether testing was done before or after starting HAART.

RESULTS: Of 363 LISA participants, roughly half (52%) had not been tested before initiating HAART and one-third (32%) had not been tested after initiation. One-seventh (14%) of persons with unsuppressed viral loads had not been tested after initiating HAART. Women (AOR: 0.53, CI: 0.29-0.96) and Aboriginal persons (AOR: 0.46, CI: 0.28-0.76) were less likely than others, to have been tested before initiating HAART. Persons that initiated treatment after 2004 (AOR: 1.75, CI: 1.10-2.76) were more likely to have been tested before initiating HAART. Persons with adherence levels ≥ 95% (AOR: 0.46, CI: 0.27-0.78), and with suppressed viral loads (AOR: 0.21, CI: 0.11-0.40) were less likely to have been tested after initiating HAART.

CONCLUSIONS: This study shows that despite clinical guideline recommendations, resistance testing is not being carried out consistently. The lack of proper monitoring can limit treatment success as antiretroviral resistance has been linked to incomplete viral suppression. The clinical community might benefit from a review of the implementation levels of resistance testing practice.

P224
INTEGRATION OF PROVINCIAL LABORATORY HIV TESTING AND HIV / AIDS SURVEILLANCE DATA INTO A SINGLE SECURE, ELECTRONIC INFORMATION SYSTEM

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BACKGROUND: In British Columbia, surveillance for HIV and AIDS has involved maintaining separate databases for HIV and AIDS case data, and HIV laboratory test data. Inefficiencies in this system included concerns regarding data quality due to manual entry of HIV positive test results, inability to readily link data between datasets, receipt of electronic data on all HIV laboratory tests on an annual basis only, and use of a test-centric (versus client-centric) data model. To overcome these issues, a single electronic information system was created.

METHODS: The HIV AIDS Information System (HAISYS) includes a daily import of all HIV test results (negative and positive) from the provincial laboratory information system, an electronic list of new positive HIV test results for review and follow-up, and both preset and specified reports for monitoring the case follow-up process. HIV and AIDS case report data are entered and linked to HIV test results through a unique client identifier. Legacy databases for HIV and AIDS surveillance data have been linked and imported into HAISYS.

RESULTS: HAISYS has been in use since September 2008. Electronic import of HIV test results has eliminated data entry errors, and the client-centric format has allowed for the retrospective and prospective linkage of HIV to AIDS data, which has not previously been feasible in BC. As a result, information on HIV cases known to have an AIDS diagnosis is now included in online surveillance data warehouses accessed by Medical Health Officers and in annual surveillance reports.

CONCLUSION: The implementation of HAISYS has improved data quality, linkages between HIV and AIDS surveillance data, data security, and access to provincial HIV testing data, and has led to new reporting of HIV and AIDS data. The creation of HAISYS will also help to facilitate the future transition to the pan-Canadian public health information system, Panorama.

P225
INFLUENZA ANTIBODY RESPONSE AND ITS ASSOCIATION WITH CD4 T CELL COUNT WITHIN THE PUMWANI SEX COHORT FROM 1997–2004

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INTRODUCTION: Influenza vaccination is recommended for patients infected with HIV, and its efficacy and safety has been previously

document (King et al. 2000). Suspension bead array technology (Luminex xMAP) allows for simultaneous and rapid analysis of numerous blood samples with diverse viral antigenic strains. This micro-bead suspension array provides a rapid method for determining immunity against various influenza strains circulating within a specific geographic region. Combining the Luminex data with key serological, flow cytometric and clinical data, would allow for the correlation of HIV status, CD4 T cell counts to antibody response rates to selected Influenza strains.

METHODS: Commercial sources of hemagglutinin antigens from 14 different strains of Influenza A and B isolates were coupled to polystyrene beads. Two time points (2001 and 2004) of archived serum samples from 45 participants of the Pumwani HIV cohort were collected and analyzed for IgG1 specific to Influenza A, B and HIV viral antigens.

RESULTS: Previous work has shown that Influenza B Jilin/20/2003 is the most prominent Influenza strains circulating in the Nairobi geographic location. As expected, patients that are HIV negative showed a stronger (2.4x increase) IgG1 antibody response to Influenza B, than those with CD4 T cell counts <250 (1.3x increase), that are HIV positive. Patients with CD4 T Cell counts below 250 did not show a statistically significant antibody response to influenza B then patients with CD4 counts >250.

CONCLUSIONS: These results highlight the poor antibody response, and thus potentially poor efficacy of, administering a live attenuated influenza vaccine to patients with <250 CD4 T cell count. The suspension bead array provides a powerful tool for population viral immunity analysis. In our cohort from Kenya, we demonstrated a link between CD4 T cell count and immune response to emerging and historical influenza strains.

P226
CANADA'S NATIONAL HIV COHORT STUDY: THE CANADIAN OBSERVATIONAL COHORT COLLABORATION (CANOC)

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BACKGROUND: CANOC was developed to evaluate the impact of antiretroviral care on the health and well being of individuals living with HIV in Canada. This collaboration provides opportunities for cohorts across the country to work together on questions of national significance and examine research problems that these cohorts alone could not answer. The team will also establish training, research and mentoring opportunities for graduate students, post-doctoral fellows and clinicians across the country interested in this area of research.

METHODS: CANOC is comprised of 31 investigators with diverse skill sets from leading Canadian research institutions in three provinces across the country. Cohort participants must have started naïve on three or more antiretroviral drugs on/after January 1st, 2000 and have a baseline HIV-1 RNA measure and CD4 cell count within 6 months prior to the start of therapy. Data extraction is performed at the participating sites and sent to a central location where a relational database is built and managed.

RESULTS: Currently, CANOC has 3101 individuals with 2379 participants (76.6%) are men, 124 (6.6%) participants identified as Aboriginal and the median age is 40 years (IQR, 34, 47). 468 (25.7%) of participants in BC, 46 (7.9%) in Ontario and 57 (9.4%) in Quebec reported ever using injections drugs. Median baseline CD4 counts vary by province from BC (160 cells/mm^3) to Ontario (194 cells/mm^3) to Quebec (212 cells/mm^3). BC's median baseline viral load was >100,000, Ontario's was 78,503 and Quebec's was 89,400 c/mL. The median length of follow-up is 41.2 months.

CONCLUSIONS: Canada is unique in that it has diverse and significant regional differences in populations affected by HIV. Through CANOC, we can examine variations in clinical management and treatment outcomes within a universal health care system and attempt to improve clinical outcomes of individuals living with HIV and those living in vulnerable communities.

P227
AGE DIFFERENCES IN NEW HIV DIAGNOSES IN CANADA

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OBJECTIVE: To assess patterns in national HIV diagnosis rates and attributed exposures by age among Canadians over 1985 to 2007.

METHODS: National HIV/AIDS surveillance is coordinated by the Surveillance and Risk Assessment Division's (SRAD), a division within the Centre for Communicable Diseases and Infection Control. HIV is reportable in all provinces and territories and varying amounts of epidemiologic information is collected and submitted to SRAD on newly-diagnosed HIV cases. Diagnosis rates (×/100,000) and exposure category patterns were compared by age group and gender.

RESULTS: HIV diagnosis rates have decreased over time but with patterns that differ by gender and age grouping in Canada. Among 15-49 year old males, the diagnosis rate peaked at 58.7 in 1990, decreased to a relative low of 17.2 in 2000 and recently 18.2 in 2007 (1990 to 2007 estimated annual percentage change (EAPC) –6.04, 95%CI: [–5.85,–6.23]). Among males 50 years of age or older, the diagnosis rate peaked at 10.4 in 1990, decreased to a relative low of 4.9 in 1999 and recently 6.6 in 2007 (EAPC: –1.66, CI: [–1.10,–2.22]). Among 15-49 year old females, the diagnosis rate ranged from 4.9 to 7.7 over 1990 to 2007 (EAPC: 1.97, CI:[1.56,2.38]) while the rate among females 50 years of age or older, ranged from 0.5 to 1.2 over the same period (EAPC: 3.43, CI:[1.93, 4.95]).

Among individuals of 50 years or older, 41% of new HIV diagnoses in 2007 were attributed to a heterosexual sex exposure and this was followed by 33% attributed to a men-who-have-sex-with-other men (MSM) exposure. Among younger adults, 43% of new HIV diagnoses in 2007 were attributed to an MSM exposure while 28% were attributed to a heterosexual sex exposure.

CONCLUSIONS: National HIV surveillance data indicates that the pattern of HIV diagnoses and exposures differ among older individuals and females, in particular, when compared to their younger counterparts.

P228
HIV AMONG ILLEGAL BURMESE MIGRANTS IN THAILAND

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BACKGROUND: Rates of HIV in Burma are suspected to be one of the highest in Asia. However, access to accurate data is limited. Human rights violations and economic factors cause many Burmese, especially ethnic minorities, to flee to neighbouring countries. Inside Thailand, illegal migrants may experience oppressive conditions and access to HIV services is limited. Our aim to was to take a preliminary look at the first seventy interviews with HIV-positive migrant workers collected from a clinic on the Thai-Burma border.

METHODS: This cohort is a prospective study of HIV+ Burmese persons living in Thailand. Participants are ≥18 years of age and recruited at the Mae Tao Clinic. Interviewer-administered surveys collect information concerning demographics, food security, quality of life, migration patterns, and violence among other variables. Descriptive data is presented here.

RESULTS: Of 70 people interviewed, 41 (59%) are women and the median age is 34 (IQR: 29-38). Of the 67 (96%) people who receive regular care for their HIV, 51 (73%) attend a local community based organization, and 18 (26%) attend an international NGO for care. The median self-reported CD4 count was 204 (130-303) with 31 (44%) people receiving antiretroviral therapy. The majority of people (94%) are illegal migrants and 63 (90%) are without health insurance. On a 50-score basis, the median stigma score was 39 (32-42) indicating that high stigma exists in this group. 44 (63%) migrant workers reported past incarceration by Thai police making treatment interruption a concern. Depression and anxiety were both high among this group (49% and 61% respectively).

CONCLUSIONS: HIV-positive individuals receiving care in the Thai border area report high levels of human rights violations and mental health concerns. With this preliminary snapshot, it is clear that integrated HIV care with primary and social care could improve patient quality of life.

P229
WHAT'S IN A NAME? DIFFERENTIATING HIV RISK BETWEEN MSM-IDU AND IDU-MSM

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OBJECTIVES: To explore the characteristics of men who have sex with men (MSM) who also inject drugs (IDU) in two population-specific enhanced HIV surveillance systems.
METHODS: M-Track and I-Track are second generation surveillance systems that track HIV and associated risk behaviours among MSM and IDU, respectively, in Canada. Participants were recruited primarily through venue-based convenience sampling, and completed a self-administered (M-Track, 2005-2007, 5 sentinel sites) or an interviewer-administered (I-Track, 2003-2005, 7 sentinel sites) questionnaire. Both Tracks collected information on demographic characteristics, injecting and sexual behaviours, and tested blood/saliva for HIV. Men who reported a male sex partner and injecting drugs in the previous 6 months were included in the present analysis.
RESULTS: Among eligible M-Track respondents, 3.0% (125/4,142) had also injected drugs (MSM-IDU), while 11.9% (192/1,615) of eligible I-Track respondents reported a male sex partner (IDU-MSM). Statistically significant differences ($p \leq 0.05$) between MSM-IDU versus IDU-MSM were: post-secondary education or higher (47.0% vs. 29.0%), drug-use (e.g. methamphetamine – 30.4% vs. 4.7%, cocaine 63.7% vs. 91.7%, heroin – 18.6% vs. 34.4%), sex with women (30.3% vs. 57.3%), sex with multiple male partners (75.2% vs. 60.4%), sex with casual partner(s) (81.0% vs. 47.9%), consistent condom use with casual partners (anal sex: 18.3% vs. 62.0%), and paying for sex with a male sex partner (30.7% vs. 6.3%). No significant differences were noted with regard to age-group, Aboriginal ethnicity, engaging in commercial sex work, and HIV-testing behaviour, positive awareness status, and serostatus (26.4% HIV prevalence for MSM-IDU and 25.7% for IDU-MSM).
CONCLUSIONS: The two surveillance systems identified persons with overlapping HIV prevalence but some non-overlapping profiles and risk behaviours. These findings may assist in assuring that appropriate prevention messages and programmes are developed, tailored towards all of the sub-groups within the broader group of men who have both same-sex sex partners and who inject drugs.

P230
VIRAL LOAD UPTAKE TO EVALUATE ACCESS TO HIV CARE IN ONTARIO

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BACKGROUND: Timely access to care following HIV diagnosis is important for reducing disease progression and, potentially, preventing HIV transmission. We examined viral load test uptake among persons diagnosed with HIV in Ontario as an indicator of entry into care.
METHODS: Persons with a nominal first HIV-positive test from 1997 to 2005 were matched to viral load data to December 31, 2005 using probabilistic linkage. Time-to-care was calculated from HIV diagnosis to the first viral load test; this was examined by age, sex, exposure category, health region and year of diagnosis using Kaplan-Meier functions. Independent predictors of time-to-care were identified using multivariate Cox regression.
RESULTS: 90.2% of 4,019 persons diagnosed to December 31, 2004 had a viral load test; the proportion within 1, 3, 6 and 12 months following diagnosis was 28.6%, 64.1%, 71.6% and 75.2%, respectively. 4,587 persons were diagnosed from 1997 to 2005: median time-to-care was 1.7 months; this was longer among persons under 35 years (2.1 vs 1.5 among older persons; p <0.0001), persons diagnosed in the Northern region (3.2 vs 1.7 in other regions; p=0.005), IDU/MSM-IDU (5.1) compared to MSM (1.8), heterosexual exposure category (1.7) and persons from HIV-endemic countries (1.6), p=0.002. Time-to-care decreased over time (3.1 months in 1997 to 1.5 in 2005, p <0.0001). Persons previously testing HIV-negative had substantially longer time-to-care (37.5 months) compared to those with serologic evidence of recent infection (6.3) and others with a first HIV-positive test (1.5), p <0.0001. In multivariate regression adjusted for diagnosis year, significant predictors of longer time-to-care were age under 35 years (aHR 0.84 [95% CI: 0.79, 0.90]), IDU/MSM-IDU (aHR 0.83 [95% CI: 0.70, 0.99] vs others), and diagnosis in the Northern region (aHR 0.82 [95% CI: 0.67, 0.99] vs other).
CONCLUSION: About 2/3 of persons accessed HIV care within three months of diagnosis. Viral load uptake improved over time, but we found significant delays in time-to-care in the Northern region, younger persons and IDU. Targeted support programs should aim to facilitate access to care among these groups.

P231
CHANGES IN THE INCIDENCE AND OUTCOMES OF HEMATOLOGIC MALIGNANCIES IN INDIVIDUALS WITH HIV IN THE ERA OF COMBINATION ANTIRETROVIRAL THERAPY

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BACKGROUND: Since the introduction of combination antiretroviral therapy (cART), the incidence rates of non-Hodgkin's lymphoma (NHL) and primary central nervous system lymphoma (PCNSL) have declined; however, less is known about the rates of other hematologic malignancies such as Hodgkin lymphoma (HL) and multiple myeloma (MM).
METHODS: A retrospective analysis of The Ontario HIV Treatment Network Cohort Study (OCS) was performed. The OCS is an ongoing prospective study of HIV-infected adults from 11 sites throughout Ontario. Incidence rates of hematologic malignancies were calculated for the pre- (<1997) and post-cART (≥ 1997) eras. Poisson regression was used to compare incidence rates. Median CD4 counts at malignancy diagnosis were then compared using the Kruskal-Wallis test.
RESULTS: The OCS database included 4118 individuals with 41978 person-years of follow up over 28 years (1980-2008). Overall incidence of lymphoma or MM per 1000 person-years throughout the HIV epidemic was 3.9 (95%CI 3.3-4.5). Fifty-six percent of individuals had a nadir CD4 <100/mm^3 pre-cART versus 37% post-cART. Incidence rates per 1000 person-years for specific hematologic malignancies in the pre- and post-cART eras are presented in the table below, with 95% confidence intervals and p-values. Median CD4 counts at NHL, PCNSL, and HL diagnosis differed significantly at 126/mm^3, 21/mm^3, and 185/mm^3 respectively (p <0.01).

Malignancy	Incidence Pre-cART	Incidence Post-cART	p-value
NHL	3.0 (2.2–4.1)	2.4 (1.9–3.1)	0.23
PCNSL	0.9 (0.5–1.5)	0.4 (0.2–0.7)	0.04
HL	0.2 (0–0.6)	0.4 (0.2–0.7)	0.28
MM	0 (0–0.3)	0.1 (0–0.3)	1.00

CONCLUSIONS: The incidence of NHL and PCNSL decreased in the post-cART era, although the difference was significant only for PCNSL. Conversely, the incidence of HL trended upward. This may indicate that while PCNSL is associated with severe immunosuppression, HL is associated with relative immune preservation. Further analysis of predictors of hematologic malignancies and survival is ongoing and will also be presented.

P232
HIV EPIDEMICS DRIVEN BY NEEDLE-SHARING AMONG INJECTION DRUG USERS: A MATHEMATICAL MODEL

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OBJECTIVE: To construct a mathematical model for the spread of HIV among injection drug users and for developing intervention strategies to contain the epidemic.
METHODS: Using cellular automata, we built a model of needle-sharing in a community of injection drug users. To capture infectious spread linked to the process of behaviour change under peer influence, groups of individuals were defined based on attitudes toward risk behaviours. Tendencies to encourage or discourage peers to engage in risk behaviours

and HIV status. Stayers never share needles. Susceptibles do not share needles but may begin under peer pressure. Those who do share needles for some injections, may be either HIV+ or HIV–. Population parameters, needle-sharing rate and HIV transmission probability were matched to published information on Vancouver's Downtown Eastside (DTES). HIV prevalence was mapped for a broad range of peer influence scenarios.
RESULTS: Without peer interaction, no HIV epidemic can occur in the model. HIV prevalence over broad ranges of encouraging and discouraging peer influence showed two main phases. HIV prevalence was either 0% (extinct state) or about 35% (endemic state). Change from one state to the other occurred over a narrow range of peer influence values. This corresponds to a phase transition or "tipping point" effect.
CONCLUSIONS: The spread of HIV among injection drug users is closely linked to the spread of risk behaviour in the community. The threshold effect observed for sustaining the epidemic implies that a critical level of coverage must be met for services that target needle-sharing behaviour to halt the epidemic. The model predicts that service coverage above the threshold quickly could bring the epidemic to extinction. However, service coverage below the threshold will have little noticeable effect on HIV prevalence, no matter how long it is maintained.

P233
ESTIMATED DIRECT TREATMENT COSTS OF HEPATITIS C INFECTION AMONG INJECTION DRUG USERS IN CANADA

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OBJECTIVE: Canadian injection drug users (IDU) are at high risk of hepatitis C (HCV) infection. However, little is known about the costs associated with HCV-related medical treatment in this vulnerable population. We therefore wished to estimate the medical costs of treating HCV-infected IDU from 2006 to 2027.
METHODS: We employed a Markov model in an integrated continuum from entry through birth or immigration and then transition to exposure-related behaviours or experiences, HCV infection, progression to HCV sequelae and mortality (incorporating lifetable, IDU specific and HIV-related causes) for active and ex-IDU in Canada. We estimated direct and indirect treatment costs based on costing data from the Ontario Case Costing Initiative (OCCI).
RESULTS: Approximately 137,000 IDU are projected to progress to HCV-related disease each year until 2027. When we applied the OCCI cost data to the prevalence of IDU with HCV-related disease from 2006 to 2027, incorporating a per annum discount rate of 6%, we estimated the total (i.e., direct and indirect) treatment costs for Canadian HCV-infected IDUs will be CDN$4.2 billion in 2006 dollars.
CONCLUSIONS: Our study demonstrates that substantial costs are associated with the treatment of HCV-related disease among Canadian IDU. In light of these estimates, and the lack of effective HCV prevention strategies in Canada, a critical need exists for the development of a variety of targeted evidence-based responses to prevent HCV transmission among Canadian IDU, as well as to allocate appropriate medical resources to meet present and future treatment needs of HCV-infected IDU.

Epidemiology and Public Health – Methodological Issues and Capacity-Building in Epidemiological and Prevention Research

P234
ARTICULATED HIV RESEARCH NEEDS OF FRONT-LINE ORGANIZATIONS

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BACKGROUND: Effective April 1, 2008 the Canadian AIDS Treatment Information Exchange (CATIE) took on an expanded mandate, becoming the National HIV/AIDS Knowledge Exchange Broker for front-line organizations related to HIV prevention, care, treatment and support for people living with and vulnerable to HIV. A national consultation was conducted in order to collect information on the priorities and needs of front-line service providers.
OBJECTIVE: One of the objectives of the consultation was to elicit information on the research needs and priorities of front-line service providers.
METHODS: The national consultation comprised 3 parts: 1) individual interviews with representatives from the nine national HIV NGOs; 2) discussions with 18 groups of front-line and professional organizations; and 3) an on-line survey.
RESULTS: Front-line service providers identified several issues. Firstly, there needs to be a mechanism through which the community can help to identify research needs and priorities. Secondly, informants articulated that on-going partnerships with academic researchers are necessary in order to effectively design and carry out research studies; however, they identified that finding academic researchers with similar research interests in their communities is difficult. Thirdly, informants identified community-based research projects and program evaluation studies as the two primary types of research findings useful to front-line agencies. However, informants felt that funding for these types of research has historically been low. Fourth, informants strongly articulated the need for evaluation research to be translated into plain language best practice guidelines and for other research finding to be synthesized specifically for front-line use so that new knowledge can be effectively integrated into program planning. Finally, various specific research topics were highlighted as areas where there are deficiencies in information relevant to front-line agencies.
CONCLUSIONS: The national consultation yielded extensive useful guidance on issues related to research and research priorities for front-line organizations.

P235
WITHDRAWN

P236
HEALTH IN MIDDLESEX MEN MATTERS – THE HIMMM PROJECT

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In 2006, the AIDS Committee of London held the first LGBT2SQ (Lesbian, Gay, Bisexual, Transgender, Two-Spirit, Questioning) Health Forum in London, Ontario to initiate dialogue and identify health concerns in our local communities. The discussions identified three areas of concern: homophobia (internal and external), isolation and social exclusion, and communication. There was consensus that when LGBT2SQ persons interface with the health care system in the region, an area known to be socially conservative, they experience overt and covert homophobia, systemically and individually. These experiences reflect the breadth of financial, structural, personal, and cultural barriers that the Gay and Lesbian Medical Association identified as impacting access, and have all been shown to have a spectrum of detrimental effects on personal health and well-being. For communities affected by both homophobia and HIV, these factors may interact to impact risk of new infection, late diagnosis, or less-than-optimal care for those living with HIV. With this, a team of stakeholders from, and allies of, the gay, bisexual, and other men who have sex with men (GB-MSM) community was formed. The Health in Middlesex Men Matters (HIMMM) team is dedicated to examine previously-known individual and collective themes and to identify new ones with regards to gay, bisexual, and other MSM's access to health care and HIV testing. The team will then document and quantify disparities that exist in these communities in Middlesex County, Ontario. The HIMMM Project will be completed in two phases. The first phase involves a series of stakeholder interviews, completed using purposive sampling methods to identify and examine themes within the community. The second phase will include preparation of a survey to be delivered online to the GB-MSM population via respondent-driven sampling (RDS), a novel network-based sampling method used in "hidden" communities. An overview of project structure and goals will be presented.

P237
ADVERSE REACTION REPORTING FOR ANTIRETROVIRAL DRUGS: GOOD, WITH ROOM FOR IMPROVEMENT

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INTRODUCTION: It is commonly estimated that < 10% of adverse drug reactions (ADRs) are reported to post-marketing surveillance programs. In British Columbia, a centralized Drug Treatment Program (DTP) for antiretroviral drugs captures ADR data. Our objective was to evaluate the completeness and accuracy of ADR reporting to the DTP and identify possible system improvements.

METHODS: Antiretroviral naive patients ≥19 years attending an HIV-focused ambulatory pharmacy were included if they initiated therapy between 01-Jan-2002 and 30-Jun-2006.

Trained pharmacist abstracters reviewed clinical charts, using standardized forms to identify reasons for discontinuation or modification of initial antiretroviral therapy (regimen change), including implicated drug(s) and ADR details. Sources of supporting information were documented. Reasons were independently reviewed by two investigators and classified as "ADR" or "other". Disagreements were resolved by consensus. Patient and regimen-specific reasons for change were extracted from the DTP and matched to abstracted chart data. Agreement between the chart and DTP was evaluated by percent agreement and kappa score.

RESULTS: Of the 612 patients included, 448 had a regimen change before 30-Jun-2008. Chart review classified 226/448 (50%) as ADR-related changes, while the DTP recorded 119/448 (27%) ADR-related changes. There was concordance on 105 ADRs and 208 other reasons for change, giving 70% agreement and kappa score 0.4 (moderate agreement). For ADRs captured by both data sources, 86/105 (82%) agreed on the type of reaction and 104/105 (99%) agreed on the implicated drug. Information about ADRs was found in pharmacist notes in 196/226 (87%), medical notes in 86/226 (38%) and laboratory records in 49/226 (22%) of charts.

CONCLUSION: Antiretroviral-related ADRs reported through prescription monitoring represent only half the ADRs documented by clinicians, but the ADRs captured have very good agreement with clinical records. HIV-specialized pharmacists identify a high proportion of antiretroviral ADRs. Mechanisms to facilitate pharmacist reporting could improve capture of ADRs.

P238
DETERMINANTS OF EMERGENCY DEPARTMENT USE AMONG INJECTION DRUG USERS WHO USE A SUPERVISED INJECTING FACILITY

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BACKGROUND: A primary reason persons who inject drugs (IDU) access the emergency department (ED) is cutaneous injection-related infections (CIRI), such as abscesses and cellulitis.

METHODS: Using Cox proportional hazard regression, we examined predictors of ED use for a CIRI, stratified by sex, among a representative sample of IDU recruited from within a supervised injection facility (SIF).

RESULTS: Among 1083 participants, 289 (27%) went to the ED for a CIRI, between January 1, 2004 to January 31, 2008 yielding an incidence density for females of 23.8 per 100 person-years (95% Confidence Interval [CI]: 19.3 - 29.0) and for males of 19.2 per 100 person-years (95% CI: 16.7 - 22.1); the difference between males and females being non-significant (p=0.09). In the adjusted Cox proportional hazard model among females, residing in the Downtown Eastside (DTES) (adjusted hazard ratio [AHR] = 1.44 [95% CI: 1.06 - 1.97]) and being referred to hospital by a nurse at the SIF (AHR = 3.57 [95% CI: 2.59 - 4.90]) and among males, living in unstable housing (AHR = 1.40 [1.00-1.96]), requiring help injecting (AHR = 1.40 [95% CI: 1.02 - 1.92]), being HIV positive (AHR = 1.83 [95% CI: 1.33 - 2.52]), and being referred to hospital by a nurse at the SIF (AHR = 3.00 [95% CI: 1.95 - 4.62]) were independently and positively associated with an increased risk of ED use for a CIRI.

CONCLUSIONS: We observed a high incidence of ED use for a CIRI that was predicted by a different set of variables for females than males, whereby being HIV positive was a predictor of treatment for males. These results support the need for continued development of efficient and streamlined treatment between services, taking into consideration differences between females and males, and the importance of primary care services.

P239
EVALUATION D'UN NOUVEAU MODÈLE DE COMMUNICATION ET DE PRÉVENTION DU SIDA. ANALYSE DES RÉACTIONS SUSCITÉES PAR LA CAMPAGNE 3000 SCÉNARIOS CONTRE UN VIRUS

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En juin 1994, trente et un films sur la prévention du Sida ont été diffusés à la télévision. Par leur mise en forme cinématographique, la diversité des situations présentées et la mise en scène de la prévention dans un contexte relationnel, ils constituent un nouveau modèle de communication pour les campagnes de prévention du Sida. L'évaluation de cette campagne a fait l'objet d'une approche qualitative et d'une approche quantitative. L'enquête téléphonique a porté sur un échantillon représentatif de 1 000 individus ayant vu au moins trois films (30 % de la population générale). Les caractéristiques de forme de cette campagne suscitent un intérêt très net tandis que le contenu des films, et notamment l'émotion ressentie, s'accompagnent d'une implication personnelle importante des individus. La nouveauté du discours préventif favorise des discussions, mais qui restent essentiellement limitées à des propos sur la prévention en général et sur les personnes atteintes. Les caractéristiques d'expérience personnelle et sociale, notamment l'aptitude des répondants à parler de sexualité, apparaissent déterminantes dans les réactions enregistrées. En revanche, l'impact de cette campagne n'apparaît pas différent selon l'âge et l'activité sexuelle. Ces résultats montrent qu'il faudrait envisager de définir une gamme de communications permettant de cibler des publics en tenant compte de la diversité des attitudes vis-à-vis de la sexualité et des possibilités d'expression sur ce thème.

P240
WITHDRAWN

Epidemiology and Public Health – Prevention Programmes

P241
THE CEDAR PROJECT: SURVIVING THE STREETS WITHOUT SHELTER, TRAUMA AND HIV VULNERABILITY AMONG ABORIGINAL YOUNG PEOPLE WHO USE DRUGS IN TWO CANADIAN CITIES

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OBJECTIVE: Aboriginal scholars suggest the legacy of colonialism is a key contributing factor to rising rates of homelessness among Aboriginal young people. This analysis examined factors related to sleeping on the streets for 3 nights or more and HIV vulnerability among Aboriginal young people who use drugs.

METHODS: The Cedar Project is an ongoing prospective study of Aboriginal young people who use drugs in Vancouver and Prince George. This analysis is based on baseline data collected by Aboriginal interviewers between 2003-2005. Venous blood samples were drawn and tested for HIV and HCV antibodies. Multivariable logistic regression identified factors significantly associated with ever having slept on the streets for 3 nights or more.

RESULTS: Of the 602 participants included in this analysis, 405 (67%) reported sleeping on the streets for three nights or more. In multivariable regression sleeping on the streets for 3 nights or more was significantly associated with being male (Adjusted Odds Ratio [AOR]: 3.5, 95% Confidence Interval [CI]: 2.1, 5.9); residing in Vancouver (AOR: 2.8, 95% CI: 1.9, 4.3); incidence of sexual abuse (AOR: 2.0, 95% CI: 1.3, 3.2); and involvement in survival sex work (AOR: 1.8, 95% CI: 1.1, 3.1).

CONCLUSIONS: Aboriginal young people face complex issues related to trauma. Having a stable place to sleep is critically important to enhancing harm reduction efforts and resiliency for Aboriginal young people who use drugs. Safe housing strategies based on Indigenous teachings and values are urgently required.

P242
TORONTO TEEN SURVEY POSTER

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INTRODUCTION: STI and HIV disproportionately affect urban youth due to a number of biological, social, developmental and behavioural factors. Chlamydia, syphilis and gonorrhea rates in Toronto youth are higher then the rest of the country. Research shows Canadian youth lack comprehensive knowledge of the risk factors associated with unprotected sexual activity and the necessary skills required to ensure the protection of their sexual health.
METHODS: The Toronto Teen Survey (TTS) is a community-based paticipatory research study which collaborated closely with a Youth Advisory Council (YAC) to conduct 90 citywide community workshops where 1216 youth were surveyed about strengths, gaps and barriers to sexual health. This information is being utilized to develop a city-wide strategy to increase positive sexual health outcomes for diverse youth populations.
RESULTS: Of the 1216 youth surveyed only 62% of youth received sexual health education in school. 18% of youth new to Canada reported never having sex education. 9% of youth living with a disability reported never having sex education. 31% of females and 23% of males are getting sex information online. 78% of youth reported learning about HIV/AIDS in school, however HIV/AIDS remained on their top three areas to learn about along with healthy relationships and sexual pleasure. 7% of heterosexual youth have been or gotten someone pregnant, while 28% of LGB2PQ had been or gotten someone pregnant. 3% of youth are questioning their sexuality. 36% of youth reported having oral sex, fisting or rimming while 36% of youth reported having vaginal or anal sex, often times as a strategy to maintain virginity.
CONCLUSION: We need to better address and serve the needs of diverse young people. Collaborating with a YAC helps ensure youths needs are better taken into account in terms of language use, concepts used, and safety/confidentiality concerns of participants. Youth involvement in developing and disseminating sexual health resources helps ensure its relevance.

P243
THE CEDAR PROJECT: CONCERNING TRENDS IN CRYSTAL METHAMPHETAMINE USE OVER-TIME AMONG YOUNG ABORIGINAL PEOPLE WHO USE INJECTION AND NON-INJECTION DRUGS IN VANCOUVER AND PRINCE GEORGE, BC, CANADA

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OBJECTIVES: We sought to investigate trends in non-injection and injection crystal methamphetamine (CM) use, and factors associated with CM use among young Aboriginal people who use drugs in two Canadian cities.
METHODS: A longitudinal analysis was conducted to investigate factors associated with CM use among participants who completed at least one of the first 5 follow-up visits. Because of the serial measurements for each study subject, generalized estimating equations (GEE) modeling with logit link was used to accommodate the temporal correlation within the participants. CM use was defined as using injection or non-injection CM over the past 6 months.
RESULTS: The rate of CM use varied from 22.5% to 28.8% over the study period. Of the 605 participants recruited from October 2003 to July 2007, 292 (48%) were female, the median age was 23.4 (IQR: 20.5-26.8). 456 (75.4%) participants completed at least one of the first 5 follow-up surveys with a median number of follow-up visits 3 (IQR: 2-4). Bivariate GEE analysis indicated younger age, male gender, sexual abuse, suicide attempt, unstable housing, smoking opiates, heroin injection, needle sharing, needing help injecting, and binge injection were associated with CM use. In the multivariate model, male gender, younger, unstable housing, smoking opiates, binge drug use and needing help in injecting remained significantly associated with CM use.
CONCLUSIONS: Programming based on Indigenous strategies for healing from lifetime and historical trauma is essential for prevention of harms related to CM use.

P244
THE CEDAR PROJECT: INCONSISTENT CONDOM USE AS A MARKER OF SEXUAL VULNERABILITY AMONG YOUNG ABORIGINAL PEOPLE WHO USE INJECTION AND NON-INJECTION DRUGS IN TWO CANADIAN CITIES

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OBJECTIVES: Aboriginal leadership is highly concerned about the rates of increased HIV infection among young Aboriginal people who use drugs. Very few studies address the sexual vulnerabilities of young Aboriginal people surviving drug-use and sexual harm. This analysis explores prevalence and potential risk factors for inconsistent condom use among young Aboriginal people participating in the Cedar Project.
METHODS: The Cedar Project is an ongoing prospective study of Aboriginal young people in Vancouver and Prince George who use injection and non-injection drugs. This analysis is based on baseline data collected by Aboriginal interviewers between October, 2003 and April 2005. Venous blood samples were drawn and tested for HIV and HCV antibodies. Multivariable logistic modeling identified risk factors associated with inconsistent condom use among young Aboriginal people who use drugs.
RESULTS: Of the 605 participants at baseline, prevalence of not always using condoms during insertive sex was 52% (n=317). In multivariable regression, inconsistent condom use was significantly associated with ever being forced to have sex (Adjusted Odds Ratio [AOR]: 1.5, 95% Confidence Interval [CI]: 1.0, 2.1); ever having a sexually transmitted disease (AOR: 1.8, 95%CI: 1.2, 2.6); having a regular sex partner who uses injection drugs (AOR: 6.7, 95%CI: 3.3, 13.7); and having a casual sex partner who uses injection drugs (AOR: 1.9, 95%CI: 1.3, 2.6).
CONCLUSIONS: Sexual health programs, including interventions which address condom use, among young Aboriginal people who use drugs must be made a priority.

P245
SEX WORK INVOLVEMENT AMONG STREET-INVOLVED YOUTH IN A CANADIAN SETTING

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OBJECTIVES: Sex workers who use drugs are known to be at heightened risk for HIV and hepatitis C infection. While much attention has been given to adult drug users who participate in sex work, less is know about street-involved youth engaged in sex work. We therefore undertook this study to examine factors associated with sex work among youth in Vancouver, Canada.
METHODS: From September 2005 to November 2007, baseline data were collected for the At Risk Youth Study (ARYS), a prospective cohort of street-recruited youth aged 14-26 in Vancouver, Canada. We compared youth who reported exchanging sex for money, gifts, food, shelter, clothes, or drugs with those who did not using multiple logistic regression.
RESULTS: The sample included 560 youth among whom the median age was 21.9 years, 179 (32%) were female and 63 (11%) reported sex work involvement. Factors associated with sex work involvement in multivariate analyses included non-injection crack use (Adjusted odds ratio [AOR] = 3.98, 95% CI: 1.99 - 7.98); Aboriginal ethnicity (AOR = 2.40, 95% CI: 1.29 - 4.45); female gender (AOR = 2.09, 95% CI: 1.16 - 3.76); and hepatitis C (HCV) infection (AOR = 1.77, 95% CI: 0.85 - 3.72).
INTERPRETATION: In summary, we found an alarmingly high rate of sex work involvement among street youth in this Canadian setting. Sex work involvement was associated primarily with female gender, Aboriginal ancestry, and crack cocaine use. These findings highlight the need for

novel approaches aimed at reducing the harms and the risk of blood-borne disease acquisition associated with sex work involvement among street youth, including polices and programs that address the unique needs of Aboriginal and female street-involved youth.

P246
ANALYSIS OF NEEDS OF PEOPLE LIVING WITH HIV IN GETTING HELP AND SUPPORT

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In today's society, the protection of human rights in the area of HIV becomes more and more essential. The protection of these rights allows people to avoid being infected and, if they are infected, to cope with HIV/AIDS consequences more effectively. The deprivation of basic rights limits the self-sufficiency of people and prevents them from getting the adequate resources and self-protection leading to inability to cope with HIV infection and its consequences.

Based on the previous experience in different projects related to HIV/AIDS, analysis of data of Regional AIDS Center, and the data of social survey of people living with HIV/AIDS, we have revealed the following violations of human rights:

- Refusal of processing the documents for issuing the ID card. As a rule, there are no lawful reasons for this refusal, it is totally based on subjective judgment of our clients by the governmental officials.
- Failure to provide the emergent medical care due to the fact of narcotic or alcoholic intoxication of the patient.
- Dissemination of confidential information (indication of HIV positive status of parents in the medical records of children, submission of this information to preschool and school officials).

In this connection, the social support and legal protection of vulnerable groups of people should draw the special attention of both the governmental and nongovernmental organizations.

P247
INITIATION OF A PROVINCIAL INFANT FORMULA PROGRAM FOR INFANTS BORN TO HIV INFECTED WOMEN IN BRITISH COLUMBIA

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BACKGROUND: Breastfeeding increases the risk of vertical HIV transmission by about 14%. Canadian perinatal guideline recommends infants born to HIV positive (+) women receive replacement feeds with commercial infant formula. This practice places significant financial burden on families that may already face economic constraints. In British Columbia HIV-positive pregnant women receive free antenatal antiretroviral therapy to prevent mother to child transmission (PMTCT). Since 1999 HIV+ women on income assistance received free infant formula from the Ministry of Housing and Social Development with approximately 30% of the women qualifying for this program. Loving Spoonful also provided infant formula to low income women not on income assistance.

METHODS: In May 2005 the authoring agencies worked collaboratively to develop a proposal for government funding to provide free infant formula to all infants born to HIV+ women. The proposal was submitted to the Provincial Health Services Authority (PHSA) with supporting letters written to the Minister of Health.

RESULTS: In May 2007 after considerable advocacy efforts by community agencies and the Oak Tree Clinic, PHSA agreed to provide funding for a comprehensive infant feeding program as part of the provincial PMTCT strategy. Infants born to HIV+ mothers, regardless of maternal income, now receive infant formula for 1 year, costing approximately $2400 per infant. Formula is provided by community pharmacies selected by the clients and billed directly to a corporate account. Measures are taken to protect the confidentiality of the women.

CONCLUSION: Provision of free infant formula to infants of HIV positive mothers is a relatively inexpensive PMTCT strategy that complements antenatal care with antiretroviral therapy. Women are more likely to provide appropriate feeds when fully funded. When advocating for this new provincial initiative, collaboration with community agencies greatly enhanced effectiveness of achieving the desired goal.

P248
INFANT FEEDING PRACTICES AMONG HIV INFECTED WOMEN RECEIVING PREVENTION OF MOTHER-TO-CHILD TRANSMISSION SERVICE AT BUGESERA DISTRICT, RWANDA

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BACKGROUND: In Rwanda, children under the age of 16 are living with HIV/AIDS and account for nearly 10% of all infections nationwide. Most infections are believed to be parentally acquired, services to prevent mother-to-child transmission (PMTCT) have rapidly scaled up at the national level from 23 sites in 2002 to 234 in 2006. Until recently, single-dose nevirapine (SD-NVP) was the standard antiretroviral (ARV) prophylaxis for women and infants but in late 2006 more complex PMTCT regimens were adopted. Introduction of these new regimens were met by challenges, lessons learned with regard to access, uptake and ultimately adherence to the complete PMTCT package will be important to know.

OBJECTIVES: To determine the types and modes of infant feeding practices among the HIV infected mothers on prevention of mother-to-child transmission (PMTCT) service at Bugesera District, Rwanda.

DESIGN: Descriptive cross-sectional study.

Setting: Kamabuye, Mwogo and Nzangwa Health Centers in Bugesera District, Eastern province of Rwanda within the PMTCT service and Weaning Food program.

Subjects: A total of 98 respondents who had delivered 101 babies were recruited for this study.

RESULTS: Thirty seven percent (37/101) of the babies were exclusively breastfed while 50% (50/101) were not breastfed at all and 14% (14/101) of the babies received mixed feeding. The length of exclusive breastfeeding ranged from 1-6 months with most (60%) women exclusively breastfeeding for two to three months. Only 15% of the women exclusively breastfed for five to six months. There was a strong relationship between mode of infant feeding and spouse's awareness of HIV status. Mothers who had disclosed their HIV status to their spouses were more likely not to breastfeed than mothers who had not disclosed their status ($p < 0.05\%$). The choice of infant feeding method was also influenced by the socio-economic status of the mothers and nevirapine uptake.

CONCLUSION: Infant feeding decisions were mainly influenced by the male partner's involvement and the socio economic status of the mother. Half of the respondents did not breastfeed at all.

P249
HIV NON-OCCUPATIONAL POST-EXPOSURE PROPHYLAXIS (NPEP) IN ALBERTA: TREATMENT COMPLETION AND FOLLOW-UP TESTING

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OBJECTIVE: The purpose of this study was to characterize NPEP cases and determine factors associated with NPEP treatment completion and follow-up serological testing.

METHODS: Retrospective analysis of approved NPEP cases in Alberta between January 1, 2005 and June 30, 2007. Patient demographics, type of exposure, and source information were extracted from the Alberta Health and Wellness electronic database. Outpatient pharmacy databases were accessed to identify duration of NPEP dispensed. Follow-up testing results for anti-HIV and anti-hepatitis C virus (HCV) antibodies were obtained from the Alberta Provincial Laboratory for Public Health. To identify factors associated with treatment completion, individuals who completed NPEP were compared with all others. To identify factors associated with follow-up testing, individuals who received at least one follow-up test were compared with those who received none. Continuous variables were compared using the Mann-Whitney test, and categorical variables were compared using the Chi-square test or Fisher's exact test; p values <0.05 were statistically significant.

RESULTS: 174 individuals were prescribed NPEP; 135 (78%) were female and the median age was 24 years. Sexual assaults accounted for 118 (68%) of exposures. NPEP was completed in 86 (49%) of cases. Individuals who completed NPEP were less likely exposed by sexual assault ($p = 0.04$) and

more likely received HIV follow-up testing (p = 0.03). Individuals who received ≥ 1 follow-up test were older (p = 0.03 for HIV, 0.04 for HCV) and more likely exposed percutaneously (p = 0.003 for HIV, 0.005 for HCV). Those who received no follow-up testing were less likely to have filled an NPEP prescription (p = 0.0001 for HIV, 0.008 for HCV). There were no known HIV seroconversions and one HCV seroconversion in this study.
CONCLUSIONS: Issues of incomplete follow-up testing and premature NPEP discontinuation were identified. Findings may be useful in developing strategies to improve adherence and follow-up.

P250
ASSESSMENT OF READINESS TO QUIT AND BARRIERS TO SMOKING CESSATION IN HIV-INFECTED PATIENTS

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BACKGROUND: Research has shown a higher smoking prevalence (50-70%) in HIV-infected patients as compared to the general population and a growing proportion of illness related to smoking. Limited research to date has also shown a lower readiness to quit smoking. The purpose of this study was to determine readiness to quit smoking as well as barriers to cessation and prior methods used among HIV-infected patients.
METHODS: A cross-sectional survey design was used. HIV-infected patients attending the Northern Alberta HIV program clinics who were current smokers or former smokers were recruited. Survey questions addressed readiness to quit, tobacco use patterns, barriers to cessation, prior cessation methods, and healthcare provider advice about cessation.
RESULTS: 159 patients were screened; 53% were current smokers. Of the 45 current smokers who completed the survey, 76% were male. Most patients were Caucasian (48%) or Aboriginal (46%); the most frequent mode of HIV acquisition was heterosexual contact (52%) or intravenous drug use (43%). 65% were precontemplators, 26% were contemplators, and 9% were in preparation phase. Approximately two-thirds of smokers reported being advised to quit smoking. Smokers reported a mean of 3.7 previous quit attempts, with nicotine replacement the most common method used. The top five barriers identified included co-morbid psychiatric illness, illicit drug use, inability to deal with withdrawal symptoms and/or stress, and cost.
CONCLUSION: The smoking prevalence in this population was high, with a low readiness to quit. Future smoking cessation programs need to incorporate strategies to improve readiness, as well as address barriers identified including other addictions.

P251
HIV PREVENTION FOR ADOLESCENTS AND THE LACK OF COORDINATION BETWEEN THE HEALTH AND EDUCATIONAL SECTORS: LESSONS FROM WESTERN UGANDA

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INTRODUCTION: Collaboration between the health sector and educational sector is critical for preventing adolescent HIV infection. As these systems must continually adapt to evolving population needs, government policies and cultural practices, a lack of coordination between these sectors can prevent these systems from responding to students' sexual health education needs and, in some cases, place adolescents at increased risk for acquiring HIV.
PURPOSE: This presentation describes the results from a qualitative study investigating the experiences of Ugandan secondary school students in accessing and using sexual health information, as well as the use of peer education to meet these information needs. The discussion will focus on the consequences of inadequate educational resources, insufficient planning, and policy changes on adolescent HIV education and prevention initiatives.
METHODS: The qualitative methodology of Participatory Action Research guided the study's design, data collection and analysis. Data was gathered through semi-structured focus groups and interviews, as well as researcher field notes, memos and observations. Participants were secondary school students from two schools in western Uganda and educational staff from the same institutions. Data was analyzed through coding and thematic development.
RESULTS: Students recount challenges accessing trustworthy and accurate HIV/AIDS information, while teachers and administrators feel limited in their ability to meet the students' information needs and create an atmosphere for safe sexual health choices. Despite these obstacles, students and educators alike collaborated with the investigator to design an intervention to mitigate these negative effects.
DISCUSSION: Successful school-based HIV education is dependent on collaboration between public health and the education system. Adolescents face some of their most challenging sexual health choices during their school-attending years. This study shows how the educational system can contribute positively or negatively to HIV prevention. Further inquiry is needed on how health and education planners can communicate, collaborate and understand each other as they seek to use an education framework to reach this vulnerable population and develop HIV prevention knowledge and skills.

P252
WITHDRAWN

P253
HIV/AIDS AND ABORIGINAL YOUTH: AN ARTS-BASED KNOWLEDGE DISSEMINATION STRATEGY FOR HIV PREVENTION EDUCATION

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We will present an innovative knowledge dissemination strategy used for research on HIV/AIDS and Aboriginal youth. HIV/AIDS is reaching epidemic proportions in some Aboriginal (First Nations, Metis and Inuit) communities in Canada. As young people are one of the most vulnerable groups to HIV infection, stopping the spread of HIV among Aboriginal communities must start with youth. While research can provide valuable information on HIV risk and prevention, this does not always transfer to HIV education. In addition, there is much evidence that conventional forms of education are not effective with youth. To address these limitations, we are working with youth from Native Child and Family Services in Toronto to turn the findings of our study with urban and on-reserve Aboriginal youth into creative youth led arts-based education. Data for the arts activities was obtained in a previous study in which trained peer facilitators conducted 6 focus groups in Ontario and Quebec with 61 Aboriginal youth. Our findings confirmed that HIV/AIDS is having a devastating effect on many Aboriginal peoples and communities and that youth have much to contribute to prevention education. With the assistance of Herbie Barnes, an Aboriginal actor, the youth are turning data collected in the study into scripts and discussion questions for HIV/AIDS education. The knowledge dissemination strategy also includes photographs and collages created by youth to complement their performance pieces. We will discuss the process of developing our arts-based education strategy and the value of this approach for HIV prevention using data from the evaluation component of the project. The presentation will include samples of the youth performances and artistic productions.

P254
THE CEDAR PROJECT: GENDER DIFFERENCES IN HEPATITIS C VIRUS (HCV) INFECTION AMONG ABORIGINAL YOUNG PEOPLE WHO USE INJECTION DRUGS IN TWO CANADIAN CITIES

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OBJECTIVE: Indigenous communities in Canada are deeply concerned about Aboriginal young women's disparate vulnerability to HCV. However due to a paucity of scientific data, this issue is poorly understood. This study sought to examine gender differences in HCV vulnerability among Aboriginal young people participating in the Cedar Project.
METHODS: The Cedar Project is an ongoing prospective study of Aboriginal young people who use injection and non-injection drugs in Vancouver and Prince George. This analysis is based on baseline data

collected by Aboriginal interviewers between 2003-2005. Venous blood samples were drawn and tested for HIV/HCV antibodies. Multivariable logistic regression, stratified by gender, identified factors significantly associated with HCV positivity for male and female participants who reported injecting drugs.
RESULTS: Of the 335 participants who reported injecting drugs at baseline, 189 (56%) were female and 146 (44%) were male. HCV prevalence was higher among females (66% vs. 49%). In bivariate analysis amongst all injectors, young women were more likely to be: sexually abused; have had non-consensual sex; involved in survival sex; fix regularly; inject heroin, coke, speedball and opiates daily or more; and overdose in the past 6 months (all $p < 0.05$), when compared to young men. In multivariable regression, when HCV vulnerabilities among men were considered, HCV positivity was significantly associated with ever needle borrowing (Adjusted Odds Ratio [AOR]: 9.1, 95% Confidence Interval [CI]: 2.9, 29.0); and duration of fixing (AOR: 1.2, 95%CI: 1.1, 1.5). Among females, having a father who attended residential school (AOR: 2.4, 95%CI: 1.0, 5.4); and duration of fixing (AOR: 1.3, 95%CI: 1.2, 1.5) were significantly associated with HCV positivity.
CONCLUSIONS: Young Aboriginal women who use injection drugs are experiencing increased prevalence of HCV, harmful injection patterns, non-consensual sex and involvement in survival sex. Interventions for young Aboriginal women that address traumatic life experiences are essential for healing from multigenerational trauma resulting from cycles of oppression, including the Residential School System.

Social Sciences – Advances in Social Research Methods in HIV

P255
MAKING KNOWLEDGE TRANSFER AND EXCHANGE (KTE) RELEVANT AND EFFECTIVE FOR AIDS SERVICE ORGANISATIONS (ASOS): BUILDING AN EVALUATION PLAN OF THE OUTILLONS-NOUS PROJECT OF THE COALITION DES ORGANISMES COMMUNAUTAIRES QUÉBÉCOIS DE LUTTE CONTRE LE SIDA

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BACKGROUND: The Outillons-Nous (ON) KTE project started with the Omega Cohort in Montreal to ensure that new and significant data was transferred from the research community to ASOs. Evaluation forms completed by participants of ON from 2006 to 2008 and minutes from meetings of the organizing committees were reviewed. This data contained appreciation variables related to the training sessions but none to judge efficacy or value of the ON. In addition, no follow up procedure or analysis was done to document whether the ON sessions actually contributed to update and/or inform new practices.
OBJECTIVE: Develop a validated evaluation plan based on the Savoir-faire et Savoir-dire community evaluation guide (Zúñiga, R, Luly, M-H, 2005) and empowerment evaluation principles (Fetterman, DM, Wandersman, A, 2005) to judge the efficacy and value of the ON training sessions.
METHODOLOGY: Evaluation in community organisations should be based on intensive consultation with key stakeholders and reflect the organisation's principles, mission statement and objectives. To build an evaluation plan, three data collection strategies will be used to ensure coherence: focus groups with community workers, interviews with executive directors or coordinators and a review of organisational documents. All data will be qualitatively analysed. Finally, a logic model, evaluation criteria and performance standards will be set and validated through a larger consultation with key stakeholders.
RESULTS: A detailed evaluation plan of the efficacy and value of the ON sessions in member organisations as well as a description of the process and lessons learned will be presented.
DISCUSSION: Using a community based evaluation approach will ensure that efficacy and value will be judged according to the needs of the stakeholders and within organisation's means. Furthermore, this process will help other ASOs to develop relevant project evaluations and actions to put forward significant social changes.

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P256
VOICES FROM THE STREET: SEX WORKERS' EXPERIENCES IN COMMUNITY-BASED HIV RESEARCH

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BACKGROUND: Community-based research has emerged as a popular framework for conducting research with marginalized populations in Vancouver's DTES. Although peer involvement is a prominent feature of the prevailing model of CBR being employed, the impacts on programming and individual peers have not been thoroughly examined.
METHODS: In 2005, a community-based research partnership (the Maka Project) was launched between a regional/international health institute (BCCFE) and WISH Drop-In Centre Society to engage survival sex working women in a participatory process to identify their health and safety needs and current barriers to prevention, harm reduction, and treatment models. A focus group was held with five women who had been peer workers at Maka for a minimum of two years. Our goal was to discover to what degree the inclusion of peer workers was effective in achieving transparency of research methods and foci, as well as testing the inclusivity of the inductive aspects of the project, and receptive impact on women's lives.
RESULTS: Key themes which arose during the focus group revolved around the comfortable and accepting atmosphere at the Maka Project for peer workers. Many had assumed that their on-going involvement in sex work or their current drug use would exclude them as candidates and were surprised when they weren't. The project provided structure, support and validation for this group of women and by their own assessment increased their self-esteem. In addition, Maka peer workers found that the stabilization they experienced made them candidates for further employment opportunities, some reporting reductions of cessation of sex work and/or drug use.
CONCLUSIONS: The consensus of the group was that the benefits of peer employment in organizations working with sex workers flow in both directions, and that meaningful peer involvement is an important and necessary feature of successful research and programming in this community.

P257
THE USE OF PARTICIPATORY ACTION RESEARCH IN ADOLESCENT HIV PREVENTION

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In the quest for effective and innovative ways of addressing the AIDS epidemic, researchers and program developers have increasingly begun to value Participatory Action Research (PAR) as a research methodology. This presentation focuses on PAR, using as an example a study investigating Ugandan secondary school students' experiences with sexual health information and peer education.
The foundational elements of PAR are a) active participation of researchers and participants in the co-construction of knowledge; b) promotion of self- and critical awareness that leads to individual, collective and/or social change and c) building of alliances between researchers and participants in the planning, implementation and dissemination of the research process (McIntrye, 2008). PAR allows for a wide variety of data collection strategies; for this project data collection occurred primarily through focus groups and interviews. Data was analysis was guided through PAR theory and methodology, using coding and thematic development and yielded findings suitable for practical application by participants.
In the initial stages of the project, through the PAR process, student and teacher participants identified students' sexual health information needs and how necessary information could best be provided to students. Then in collaboration with the researcher, the participants guided the development of a school-based peer education program. The results demonstrate PAR's usefulness in revealing the participants' actual needs. PAR also provided participants with the opportunity and responsibility to direct the course of the investigation and intervention, with the research facilitating the creation of solutions. Furthermore, the findings reveal how PAR

successfully contributed to the students' and teachers' empowerment and ownership of the peer education program, aiding in the future success and sustainability of the program. The participants demonstrated a clear sense of motivation to continue the project in the absence of the principal investigator.
PAR challenges researchers to relinquish control of the project's course and outcome, and act in the role of guide and facilitator. PAR has application in numerous contexts, but is a particularly useful method for marginalized and/or disadvantaged populations.

P258
THE MEN'S BODY MAPPING PROJECT: STORYTELLING, ADVOCACY AND HIV KNOWLEDGE EXCHANGE THROUGH AN ARTS-BASED PROCESS

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Knowledge Transfer and Exchange (KTE) strategies represent an important process by which health care providers and other stakeholders can become engaged in treatment decision-making activities, education and advocacy. During the fall of 2007 in Toronto, 7 men living with HIV created life-size "maps" of their bodies through a facilitated Body Mapping workshop. This process involved drawing, painting, group discussion, interviews and personal reflection. The resulting body maps were used in a non-traditional KTE approach that combined artwork and storytelling to communicate the experiences of long-term HIV/AIDS survivors to multiple audiences.
The translations of biomedical and experiential ways of knowing require effective mediums for information delivery and dissemination. In the Body Mapping Project, KTE was used to raise awareness and bridge information gaps that may separate the knowledge and experiences of people living with HIV/AIDS (PHAs) from those of their health providers, their support networks, as well as the general public.
Research themes emerging from observation and interviews were drawn out to form personal narratives that accompanied the body maps. Various iterations of the maps facilitated diverse forms of public engagement, through the development of a website and other media. These dissemination tools offered observers insight into the artist's biomedical, psychological, social and policy-based experiences. Additionally, body mapping exhibits were displayed in numerous spaces, including a university campus, a retail store and the Global Village at the 2008 International AIDS Conference.
The men's Body Mapping Project has contributed to our understanding of arts-based KTE through the implementation of dissemination strategies directed at a wider public audience. Project participants also benefited from the individual and group body mapping experience, taking the opportunity to explore deep-rooted experiences of stigma and exclusion. The artists also received support from project partners through a number of offshoot activities, bringing their stories and images to public recognition.

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WITHDRAWN

P260
NEW DIRECTIONS: A COLLAGE EXHIBITION OF YOUTH NARRATIVES ON HIV/AIDS

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Toronto, ON

This exhibition will showcase visual collages gathered from a recent study investigating the representation of youth narratives on HIV/AIDS. Current studies on HIV/AIDS education and prevention have demonstrated that existing curriculum models are inadequate for addressing the HIV/AIDS epidemic. Innovative HIV/AIDS curriculum models are needed in order to provide alternatives to the present Canadian curriculum. This exhibition, of 6-10 visual collages and accompanied narratives completed by Toronto youth (18-24), follows the work of arts-based HIV/AIDS researchers who have promoted and explored the use of the arts as one particular methodological and pedagogical strategy for addressing HIV/AIDS with youth. Through engaging in the process of making collages, what stories do youth tell about HIV/AIDS? What discourses or narratives are produced when collage and narrative are used as methodological tools to address youths concerns and/or experiences of HIV/AIDS? By responding to their own collage texts, as well as the collage texts of others, how are issues of representation and identity addressed and interpreted? Each exhibited collage piece speaks to youth participants' experiences and/or concerns on the HIV/AIDS epidemic.
As a non-linear, multi-vocal, contradictory and fragmented genre composed of circulating media materials, collage may function as a generative metaphor for re-theorizing youth sexuality and knowledge in HIV/AIDS education. In this context, collage is also a useful method for learning more about youth narratives on HIV/AIDS. Social science research has began to document the ways in which HIV/AIDS education and prevention programs reproduce neoliberal notions of the rational, autonomous individual. These arguments critique HIV/AIDS education and prevention programs that position youth as rational actors existing outside social contexts (i.e. outside their gendered, classed, raced positions) rather than viewing youth sexuality as bound up in a web of complicated, and often contradictory anxieties, fears, and expectations. By using collage as a theoretical and methodological entry-point into re-imagining new forms of HIV/AIDS curriculum for youth, this exhibition and study challenges us to think beyond conventional ways of viewing youth sexuality, HIV/AIDS curriculum and research.

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Social Sciences – HIV Policy and Social, Political, and Legal Aspects of HIV

P262
USING GIS MAPPING TO EXAMINE THE EQUITY OF SPATIAL ACCESSIBILITY TO COMMUNITY-BASED AIDS SERVICE ORGANIZATIONS IN THE GREATER TORONTO AREA

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BACKGROUND: Community-based AIDS Service Organizations (CBAOs) provide various health and social services to people living with HIV and their families. Studying the geographic distribution of CBAOs in relation to population characteristics has an important implication to ensure service needs are met.
METHODS: Locations of 42 CBAOs in the greater Toronto area (GTA) were mapped using their addresses. Population and key sociodemographic variables were extracted from 2006 Census data and factor analysis was employed to extract common characteristics of communities in the region. Extracted factor solutions were mapped to examine if there is an overlap between the pattern of these characteristics and geographic accessibility to CBAOs. Two-Step Floating Catchment Area (2SFCA) method was used to calculate spatial accessibility indexes. Most communities in the city of Toronto have higher accessibility to CBAOs within a 20km travel distance. In the GTA, the inner suburban and northern central areas have lower accessibility while communities in the west and eastern part do not have access within 20km travel distance. Factor analysis yielded three common characteristics of the communities: (1) socioeconomic disadvantage, (2) mobility of recent immigrants, and (3) population characteristics including visible minorities.
RESULTS: Areas with high socioeconomic disadvantage were concentrated in the city of Toronto whereas communities in central, central south, and south western part of GTA had higher index of recent immigrant mobility. Higher population and characteristics indices were observed in the central north and western part of the region. An overlap was observed between the spatial pattern of accessibility to CBAOs and socioeconomic disadvantage characteristics of communities, i.e., communities with low socioeconomic status have relatively better accessibility to CBAOs. However, areas with higher concentration of population, recent immigrants, and visible minorities have low or no accessibility to CBAOs.
CONCLUSION: Geographical information system mapping analysis can be helpful to policy makers to ensure services (e.g., CBAOs) are designed and located in the communities where there is the most needs.

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P264
NATIONAL SURVEY OF FRONT-LINE ORGANIZATIONS TO GUIDE STRATEGIC DIRECTIONS FOR CATIE: THE NEW NATIONAL HIV/AIDS KNOWLEDGE EXCHANGE BROKER

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BACKGROUND: Effective April 1, 2008 the Canadian AIDS Treatment Information Exchange (CATIE) took on an expanded mandate, becoming the National HIV/AIDS Knowledge Exchange Broker (KEB) for front-line organizations related to HIV prevention, care, treatment and support for people living with and vulnerable to HIV/AIDS.
OBJECTIVE: The goal of the consultations was to document the perspectives of local, regional and national community-based HIV/AIDS organizations with respect to their needs and expectations for CATIE's KEB roles and services.
METHODS: The national consultation comprised 3 parts: 1) individual interviews with representatives from the nine national HIV/AIDS non-governmental organizations (NGOs); 2) discussions with 18 groups of front-line organizations and 3) an on-line 15 minute quantitative survey (launched July, 2008). Email and mail invitations to complete the survey were sent to members of numerous different national and regional agencies and networks. The results of the on-line survey are the focus of this abstract.
RESULTS: Three hundred and twenty two people representing a diverse array of front line organizations completed the survey. Prevention and treatment information needs are high for frontline organizations and their ability to locate these quite low. Preferred mediums by which to receive information are the web; print materials; in person conferences, workshops, skills building or meetings; and e-mail. Preferred sources of information are presentations, workshops, and skills building; plain language materials; research summaries; and health promotion materials. The 5 topic areas with the highest reported need for information are HIV prevention; legal issues; addictions; mental health; and stigma and discrimination. The top four activities identified for CATIE as a knowledge broker are the development of plain language HIV information resources; the creation of a comprehensive website; the dissemination of HIV research bulletins; and distribution of print materials produced by organizations across Canada.
CONCLUSIONS: The national on-line survey yielded extensive useful guidance for CATIE as it develops its new role as Knowledge Exchange Broker. The information collected through the consultations is reflected in CATIE's new strategic plan available at www.catie.ca.

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ACKNOWLEDGING COMMUNITY KNOWLEDGE: FRONTLINE PERSPECTIVES ON EFFECTIVE HIV KNOWLEDGE BROKERING

S Patten[2], LA Challacombe[1], L Edmiston[1]
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BACKGROUND: Effective April, 2008 the Canadian AIDS Treatment Information Exchange (CATIE) took on an expanded mandate becoming the National HIV/AIDS Knowledge Exchange Broker (KEB) for frontline organizations related to HIV prevention, care, treatment and support for people living with and vulnerable to HIV/AIDS.
OBJECTIVE: The goal of the consultations was to document the perspectives of local, regional and national community-based HIV/AIDS organizations with respect to their needs and expectations for CATIE's KE broker services.
METHODS: Between January and June 2008, CATIE conducted individual interviews with representatives from the nine national HIV/AIDS NGOs and discussions with 18 groups of frontline organizations (i.e., AIDS service organizations - ASOs, and professional groups). The consultation data were captured through detailed notes which were then transcribed and analyzed thematically.
RESULTS: National NGOs and frontline organizations described their vision for a KE network, emphasizing the need for "fewer gaps between what we know and what we do" and greater awareness and flow of knowledge and expertise. Consultation participants envisioned the KEB as serving a proactive role in matching knowledge users with producers, and facilitating KE activities on specific topics. Several strengths and opportunities were identified for the KE role, including: CATIE's established role in treatment KE, partnerships among national NGOs, and pre-existing KE mechanisms and fora. Barriers and challenges included concerns about increased workload, inadequate financial resources, meeting the full range of knowledge needs, and meaningful linkages between frontline service and HIV research. Frontline organizations expressed the need for an information hub which would allow them to find resources and experts in specific service areas and topics, and provided practical suggestions for ensuring cultural competence and appropriateness in KE activities. Researchers, pharmacists and nurses also provided useful perspectives on how best to bridge their knowledge and expertise with that of frontline ASOs.
CONCLUSIONS: The consultations yielded extensive useful guidance for CATIE as it develops its new role as Knowledge Exchange Broker. The information collected through the consultations is reflected in CATIE's new strategic plan available at www.catie.ca.

P266
HEALTH & SOCIAL SERVICE EXPERIENCES OF ELEVEN OLDER ADULTS LIVING WITH HIV/AIDS IN THE NATIONAL CAPITAL REGION

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This study investigates the health and social service experiences of older people living with HIV/AIDS (or, oPHAs) in the national capital region. Eleven participants, recruited through a local AIDS Service Organization, completed a demographic survey, indicated types of services used, completed scales measuring barriers to care and depressive symptoms and were interviewed regarding their service experiences. Participants reported using a variety of HIV-specific and mainstream services, and reported lacking long term care, housing and mental health services. oPHAs experience feelings of uniqueness, isolation, and confusion in their services, which is argued to constitute marginalization among this group. They also reported several discriminatory service experiences, and attributed this to ideologies relating to HIV-exceptionalism and HIV-related stigma. Participants' stories also spoke of professional, institutional, and PHA power. Finally, experiences were framed as barriers or facilitators to service use. Overall, participants' stories included phenomena articulated in previous literature on HIV and aging. Social workers in this niche field may wish to engage in interdisciplinary work with other professionals, as well as act transdisciplinarily with PHA community members.

P267
CHALLENGES AND BARRIERS TO HEALTH CARE HIV SERVICE DELIVERY: THE EXPERIENCE OF ABORIGINAL WOMEN IN CANADA

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PURPOSE: As part of a larger national meta-synthesis project related to women and HIV prevention, this paper describes the challenges and barriers that both HIV service providers and Aboriginal women face in relation to health care service delivery.
METHODOLOGY: A national meta-ethnographic synthesis of qualitative studies related to HIV prevention among both Aboriginal and non-Aboriginal women in Canada published between the years 1996 and 2008 was used to specifically explore health care service delivery for Aboriginal women, including a comparative analysis of structural and other barriers to health services. As part of this meta-synthesis, a national team of researchers identified, assessed, and interpreted the existing Canadian context specific to HIV prevention with the aim of informing subsequent knowledge translation outputs at the national level.
RESULTS/LESSONS LEARNED: There is a substantial body of research demonstrating that Aboriginal women continue to face barriers in

gaining access to the mainstream health care system. While many Aboriginal women continue to search for services that are gender-sensitive, culturally competent and inclusive of their children, others live in isolation as a result of multiple stigmas and barriers to services. Aboriginal women living in urban and metropolitan centres, far from their home communities, may have made this move based, in part, on the assumption that larger centres provide anonymity, better support services and greater acceptance of HIV-positive women. Service providers from both urban and rural/reserve settings also experienced challenges in providing services to Aboriginal women, including fear of HIV, challenges in accessing current information, and inadequate referral resources. Although barriers exist, service providers were concerned with the comprehensive health needs of people living with HIV/AIDS. The need to integrate the experiential knowledge gained from Aboriginal women and service providers into policies and programs is vital to ensuring that the health needs of this population are being met. The knowledge generated from the synthesis is relevant to community stakeholders, academics, and policy makers engaged HIV prevention, care and treatment in Canada.

P268
FACILITATING OUTCOME EVALUATION AMONG HIV/AIDS SERVICE PROVIDERS IN BC

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The BC Provincial Health Services Authority recently conducted a needs assessment regarding the use of outcome evaluation among HIV/AIDS service providers. Major findings demonstrate that the amount of outcome evaluation varies depending on an agency's capacity. Although service providers recognize the need for accountability, outcome evaluation is usually conducted on a minimal and ad-hoc basis due to various constraints. These include a lack of time, staff, funding, expertise, common outcome measures, and information technology. Other disincentives include different reporting requirements among funders and not seeing their evaluation reports used in meaningful ways. Most evaluation that does occur is process-oriented with a focus on collecting data regarding outputs (i.e. units of service), with little subsequent interpretation or use of this data. Very few service providers describe evaluation, both process and outcome, as playing a significant part in their program planning process. Further, service providers do not make a distinction between 'evaluation' and 'reporting to the funder'. Evaluation is largely perceived as a reporting exercise rather than an activity that benefits the organization as a whole. When outcome evaluation does occur, it is largely because there is funding and/or staff time available, it is made a requirement by the funder, and there is access to expertise and data collection tools. It is also facilitated by building it into the front-end of program planning, having an organizational culture that values evaluation, and accreditation. Suggestions for increasing outcome evaluation include more financial resources, a provincial evaluation resource person(s), standardized data collection and reporting forms, outcome evaluation software, information technology upgrades, clear and realistic guidelines from funders, greater knowledge transfer exchange, and staff training. Options being considered to facilitate greater outcome evaluation among HIV/AIDS service providers in BC include a provincial evaluation resource person(s), standardized online data collection and reporting, and HIV/AIDS specific accreditation.

P269
A REVIEW OF METHODS AND MODELS OF CULTURALLY SENSITIVE HIV PREVENTION PROGRAMS FOR CANADA'S FEMALE ABORIGINAL POPULATIONS

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PURPOSE: To examine the most effective methods/models of providing culturally sensitive HIV prevention programming in Aboriginal communities in Canada.

METHODS: This paper is based on a meta-ethnographic synthesis of qualitative studies that were published between 1996 and 2008 and are related to HIV prevention among Aboriginal and non-Aboriginal women in Canada. During this synthesis a team of researchers identified, assessed, and interpreted the Canadian pool of knowledge specific to HIV prevention programming for female Aboriginal clients, in both urban and rural community settings. The knowledge generated during the synthesis is relevant to community stakeholders, program coordinators, academics, and policy makers engaged in HIV prevention across Canada. This paper examines the need for culturally sensitive HIV programming for the Aboriginal population, highlighting several programs that are currently available. We will also propose benchmarks for the assessment of culturally sensitive HIV prevention programs.

RESULTS/LESSONS LEARNED: The current body of knowledge regarding the necessity for culturally sensitive HIV prevention programming for Aboriginal peoples suggests that the community development approach is a best practice for program delivery. The ability and opportunity for an Aboriginal community to be involved in the development and direction of their own HIV prevention programs empowers individuals and communities, increases the likelihood of buy-in, and increases the overall efficacy of the programs. Particular attention to the historical Aboriginal community structure and traditions is paramount to the success of an HIV prevention program.

P270
HOW DO WE DEFINE "COMMUNITY" AND WHY DOES IT MATTER FOR HIV/AIDS POLICY? AN INSTITUTIONAL ETHNOGRAPHY OF ASOS

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This presentation considers how HIV policy is formulated. National policy documents such as Leading Together appeal to relevant stakeholders in the fight against HIV/AIDS, notably AIDS Service Organizations (ASOs). These stakeholders in turn help to identify priorities for action. In Canada, the naming of "specific populations" to be addressed in HIV education emerges as a result of this institutional process.

Of course, this kind of consultation with relevant actors in the field of HIV/AIDS is necessary – the expertise of ASOs needs to be acknowledged. That said, our research reveals that the formulation of HIV/AIDS policy in Canada does not consider populations that are underserved by existing ASOs. Our knowledge on HIV/AIDS is circular: policy is formulated in consultation with specific ASOs, who identify strategic priorities that are relevant to the populations with whom these ASOs work. People who fall outside the scope of more traditional ASOs, however, are absent within this site.

Furthermore, our work shows that the relations between ASOs and national HIV/AIDS policy also reflect broader social relations between community organizations and the state. Since the early 1980s, the retreat of the welfare state has transformed the role of community organizations, who increasingly limit themselves to service provision. Moreover, political action is achieved by coalitions of organizations, not by everyday people mobilized through grassroots community politics. This type of political arrangement is typical of neoliberal contexts, in which certain community organizations are permitted to provide services and to inform policy.

In summary, then, this presentation considers how HIV/AIDS policy is formulated, the actors who are considered to constitute "community" in such work, and the ways in which current ASOs also support neoliberal state relations. We ask some tough questions about the limits of ASOs, and about glaring absences in HIV/AIDS national policy. Nevertheless, it is necessary to ask critical questions about the limits of our response to HIV/AIDS if we are to develop innovative ways to face the evolving epidemic.

P271
IMPACT OF JOB SECURITY ON HEALTH-RELATED QUALITY OF LIFE: THE OHTN COHORT STUDY

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OBJECTIVE: To examine the relationship between employment status, job security and health-related quality of life in HIV/AIDS.

METHODS: The OHTN Cohort Study (OCS) is a longitudinal

observational cohort that collects clinical and sociobehavioural data on people living with HIV in Ontario. Participants provided baseline data on demographic status (age, gender, sexual orientation, marital status, ethnicity, country of birth), socioeconomic factors (education, household income, employment status and job security), HIV disease markers (recent CD4 counts, viral load, AIDS-defining conditions, time since diagnosis), non-medicinal drug use, and heath-related quality of life (SF36-v12). We performed regression analyses to evaluate the contribution of employment status and job security to the physical and mental health components of quality of life. All models controlled for potential confounders.

RESULTS: The study sample included 1,172 participants: 85% male, 76% Caucasian, 72% gay, lesbian or bisexual, 85% with at least high school education, 45% employed with a mean age of 47 years. In univariate analyses, employment status and job security were significantly associated with both Physical and Mental Component Summary scores (PCS and MCS respectively). In multivariate modeling, only job security remained significant for both physical and mental health quality of life after controlling for potential confounders [PCS (β=1.99, 95%CI 0.01 to 3.9) and MCS (β=3.35, 95%CI 1.04 to 5.67)]. In all regression models, job security was associated with better health.

CONCLUSION: Job security is associated with increased health-related quality of life after controlling for potential confounders. Previous research has suggested that there may be a therapeutic benefit associated with participation in the labour market. This cross-sectional study suggests that employment status confers a health advantage only if people with HIV perceive their jobs to be secure.

P272
PSYCHOSOCIAL FACTORS PREDICT EMPLOYMENT STATUS IN HIV/AIDS: THE OHTN COHORT STUDY

S Rueda[1], T Bekele[1], K Gibson[1], J Raboud[1], J Cairney[2], W Husbands[1], A Rachlis[1], N Mittmann[1], S Rourke[1], The OHTN Cohort Study Team[1]
[1]Toronto, ON; [2]Hamilton, ON

OBJECTIVE: To examine the demographic, clinical and psychosocial predictors of employment status in HIV/AIDS.

METHODS: The OHTN Cohort Study (OCS) is a longitudinal observational cohort that collects clinical and sociobehavioural data on people living with HIV in Ontario. The present analyses use data collected at three clinical sites in downtown Toronto (St. Michael's Hospital, Toronto General Hospital and Sunnybrook Hospital). Participants provided baseline data on demographic status (age, gender, sexual orientation, marital status, ethnicity, country of birth), HIV disease markers (recent CD4 counts, viral load, AIDS-defining conditions, time since diagnosis), psychosocial factors (education, employment status, HIV-related stigma, social support, depression, harmful alcohol use, non-medicinal drug use). We performed logistic regression analyses to evaluate the relative contribution of these variables to employment status. All models controlled for potential confounders.

RESULTS: The study sample included 467 adults living with HIV: 84% male, 67% Caucasian, 51% employed with mean age of 45 years. Univariate analyses showed that age, education, time since HIV diagnosis, social support, mastery, number of medical symptoms and depression were associated with employment status. In the final model, higher level of education was associated with increased odds of being employed (OR=2.7) while older age (OR=0.96), time since HIV diagnosis (OR=0.97), number of medical symptoms (OR=0.6) and being depressed (OR=0.5) were associated with decreased odds of being employed.

CONCLUSION: This study supports further evaluation of (un)employment issues in HIV as a complex combination of psychosocial factors are potentially involved as determinants of labour market participation. Depression and medical symptoms are treatable conditions and thus potential targets for interventions aimed at improving employment outcomes.

P273
NEWSPAPER PORTRAYAL OF HIV TRANSMISSION AND NONDISCLOSURE IN CANADA: INTEGRATING MEDICAL SOCIOLOGY AND MEDIA STUDIES

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In the introduction to his edited book, Clive Seale (2003) argues that medical sociology must include media studies if social scientists are to fully understand the experience of illness from those who experience it. In Canada, perhaps the strongest supporting evidence for this argument is the history of media reporting and the portrayal of HIV transmission and nondisclosure over the past twenty years. Textual analyses have consistently noted that news coverage of HIV/AIDS is often saturated with portrayals of strong and weak moral character, victimization and blame, all of which have a stigmatizing effect on people living with HIV/AIDS (PHAs). Many cultural theorists have hypothesized that media content relies heavily on standardized, inflexible "templates" to communicate familiar narratives; medical sociologists, however, have paid scant attention to the use and power of mediated messages of HIV/AIDS. Using Foucauldian inspired critical discourse analysis, we explore the media portrayal of HIV transmission in Canada. We examined 277 stories involving HIV transmission reported in major Canadian newspapers from 1987-2008. Although some of our findings are consistent with existing media research, we also note examples that challenge the inflexibility of standardized templates. Further, we consider recent evidence that media production is more critical and receptive to activist intervention than often assumed. We conclude with a recommendation for a research strategy that moves beyond textual analysis and integrates questions of medical sociology. This presentation contributes to a small but growing body of work concerning the criminalization of HIV/AIDS in Canada.

P274
COMMUNITY ADVISORY BOARDS IN HIV CLINICAL TRIALS RESEARCH IN CANADA: STRENGTHS AND CHALLENGES

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OBJECTIVES: Community involvement is generally accepted as key to the development of safe and effective HIV vaccines. The Canadian AIDS Society (CAS) is a coalition of over 120 community-based organisations across Canada and seeks effective means to implement the Canadian HIV Vaccine Plan.

METHODS: A literature review was commissioned to assess the role of Community advisory boards (CABs) in Canada. CABs are set up to facilitate research with the provision of advice about the informed consent process and the design and implementation of research protocols among others. The review was conducted by an external consultant.

RESULTS: The review found that in Canada CABs are not established protocols in vaccine and microbicide clinical trials although community involvement in research is mainstreamed in a number of research approaches and ethics guidelines. Research teams involved in clinical trials in Canada are currently exploring how CABs can support vaccine and microbicide trials as expressed by the Canadian Immunodeficiency Research Collaborative (CIRC) undertaking of the development of a Community Education Plan (CEP) and the inclusion of a CAB. A major obstacle to the analysis of the clinical trials processes underway is the lack of public access to information related to CABs (e.g., composition, level of engagement, processes, etc.) and clinical trials in general. The review also found that while useful the CAB model may not fully represent particular aspects of the local community and that outreach efforts could be conducted to validate the positions of the CAB.

CONCLUSIONS: CAB models have provided avenues for community engagement in HIV vaccine and microbicide clinical trials worldwide. Community involvement enhances the potential for stronger participation, facilitates consent and reduces stigma. Recent analyses of research results support the multiple strategies approach for successful research protocols and trials, further ongoing monitoring, adjustment, and advocacy.

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WITHDRAWN

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WITHDRAWN

P277
FORCED HIV TESTING: LEGISLATIVE DEVELOPMENTS AND HUMAN RIGHTS CONCERNS

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OBJECTIVES: To track adoption of provincial and territorial legislation authorizing compulsory HIV testing and analyze human rights implications.
METHODS: Review of primary legal sources (including legislation and case law), legal literature, guidelines on HIV testing and counselling, and media reports, with a human rights analysis. A plain language overview, Q&A, and submissions to parliamentary committees have been produced.
RESULTS: In 2001, Ontario became the first province to pass legislation authorizing forced testing for HIV and other blood-borne diseases. Since then, four others have adopted similar legislation and a sixth province has a bill pending. The legislation allows certain persons exposed to bodily fluids either in the course of their work (such as police officers, firefighters, paramedics), as victims of violent crime, and/or while voluntarily administering first aid to apply for an order requiring the source person to be tested for HIV and other communicable diseases.
It is unethical and illegal to perform a medical procedure such as HIV testing on anyone without his or her informed consent. Legislation that authorizes forced testing and the disclosure of test results violates Canadians' constitutional rights to bodily integrity and privacy. Penalties for refusing to comply with a forced testing order criminalize people for asserting their legal rights to bodily integrity and informed consent. The benefits to be obtained from forced testing are limited and the risk of HIV transmission from an occupational exposure are exceedingly low.
CONCLUSION: Forced testing legislation is a crude overreaction that raises troubling ethical and legal issues. What is needed is a more careful look at the risks and consequences of forced testing, as well as measures to better protect the health of emergency workers and the rights of people living with HIV.

P278
HOUSING INSTABILITY OVER TIME IS ASSOCIATED WITH WORSE HEALTH OUTCOMES IN PEOPLE LIVING WITH HIV IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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BACKGROUND: Housing status and instability are known by front-line providers to be associated with poor health for people living with HIV/AIDS in Canada but so far limited research in Canada has demonstrated these relationships.
METHODS: As part of our CIHR-funded HIV, Housing and Health study in Ontario – The Positive Spaces, Healthy Places Study – we enrolled 605 people living with HIV from across Ontario and followed them over one year using both quantitative population health surveys / instruments and qualitative interviews conducted by peer research assistants to examine housing status and the relationship to key determinants of health. In the current study, we examine the factors associated with housing instability and in particular the impacts of moving on health.
RESULTS: There were 510 of 605 who completed the 1-year evaluation (84%). Of the 510, 78% did not move (n=401), 15% moved at least once (n=75) and 7% moved twice or more (n=34). Compared to those with stable housing, those who moved once were more likely to have been homeless previously (RR = 2.1) and have had experienced housing-related discrimination (RR = 3.6). Those who moved twice or more were also more likely to have been to have been homeless previously but at a higher rate (RR = 7.4) and have had experienced more housing-related discrimination (RR = 7.5) but this group was also more likely to have been diagnosed with HCV (RR = 3.2), have used more alcohol and substances harmfully (RR = 3.8 and 9.4, respectively), experience significant depression (RR = 4.0), and have been previously incarcerated (RR = 5.3).
CONCLUSIONS: People with HIV in Ontario who have complex health care needs require immediate access to safe, affordable, supportive and stable housing to maintain their health. Decision-makers must consider expanding funding to ensure that appropriate housing options are available. Our results suggest that policy makers consider these housing solutions to be good health care.

P279
ENHANCING LABOUR FORCE PARTICIPATION FOR PEOPLE LIVING WITH HIV IN CANADA: SCOPING REVIEW RESULTS

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OBJECTIVE: To conduct a scoping review to inform development of a conceptual framework to promote the enhancement of labour force participation for people living with HIV/AIDS (PHAs) in Canada.
METHODS: The research process was guided by an advisory committee that included PHAs, employers, service providers, insurers, and policy makers. We conducted a scoping review of published and grey literature on labour force participation for PHAs from 1980 to end of February 2008. A search of ABI, PsycINFO, MEDLINE, EMBASE, and CINAHL identified 11,165 potentially relevant abstracts. 243 articles met the inclusion criteria (restricted to English or French articles primarily from developed countries). A corresponding review of grey literature gathered through key informants and web searches identified 42 additional relevant articles. Data were extracted onto a standardized charting form and summarized to formulate a preliminary framework. The preliminary framework was reviewed and augmented by members of the advisory committee during a day-long consultation.
RESULTS: The preliminary conceptual framework incorporates key themes related to labour force participation for PHAs, including the meaning of work; the range of vulnerable populations affected; work characteristics; barriers and facilitators to work (the episodic nature of HIV and issues related to health, employment, community, and public policy); strategies and supports for entering, returning to and/or sustaining employment; and potential outcomes of labour force participation (risks/benefits for individuals, and costs/benefits for employers, governments, and insurers).
DISCUSSION: Labour force participation provides income and promotes social engagement and self-determination for PHAs. Changing workplace and income support policies and developing programs to assist people living with HIV to participate in the labour force is a challenge in need of attention. This preliminary framework will be further developed through a consultative process to inform programs and policies that can assist PHAs to return to and sustain paid employment.

P280
BEST PRACTICES IN EMPLOYMENT RETENTION

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This essay is concerned with best practices in employment retention, the processes used by service providers across 25 non-profit agencies comprising the Job Opportunity Information Network (JOIN). It is an essay that interprets the feedback from managers, front-line staff and consumers on the topic of finding and maintaining employment. The "best practices" project was led by the advisory committee of the JOIN managers group. This research project was funded by the Ontario Disability Support Program, and serves to provide special insight to best practices, reflecting upon an outcomes based funding model that compensates service providers for successful employment retention. JOIN represents a diverse network of disability groups that complicate the process of both developing a universal funding model and in developing an adaptable service delivery template. Citizenship themes arose; controversy related to employment as a form of social participation vs. economic value; efficiency vs. equity; affluence vs. poverty and inclusiveness vs. exclusiveness. ODSP stakeholders include people with disabilities, service providers and the Government of Ontario. Developing an understanding of the benefits of investment in short and long-term workforce attachment strategies that serve the interests of all stakeholders is a

focus of this paper. Critical & theoretical perspectives on disability studies, law & policy are explored to envision a service delivery model that works. People living with HIV experience difficulty re-entering and advancing within the workforce. Episodic disability poses its own challenges in regard to retained employment. This project provided feedback to ODSP on what service providers and clients felt was most helpful in regard to employment supports for career advancement.

Social Sciences – HIV Treatment and Care

P281
SUSTAINING HEALTH SUSTAINING HOUSING: AN EVALUATION STUDY OF A FIFE HOUSE SUPPORTED HOUSING PROGRAM FOR PEOPLE LIVING WITH HIV/AIDS

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Sustaining Health Sustaining Housing is an evaluation study of one of the Fife House-supported housing program for people living with HIV/AIDS (PHA's). The evaluation aimed to investigate how PHA's who have accessed the support services viewed the impact of these services on their housing experiences and their overall health.

Both quantitative administered questionnaire and focus group method were used in order to access information from current service users of the program. Two peer research assistants (PRAs) were trained in quantitative survey data collection and focus group facilitation methods. Thirty five residents were recruited and surveyed by the PRAs for the quantitative study of which fifteen participated in the focus groups. The evaluation aimed to collect information on socio-demographics, housing and sense of neighborhood and Fife House services and programs.

Twenty six (74%) participants were in the age group of 40-54 years, 97% were male and 74% were born in Canada. Ontario Disability Support Program was the main source of income and 43% had a college or higher degree. The concept of 'community' had a different meaning for residents as compared to the service providers. While the residents may be connected by a common experience of HIV, it also seems to act as a barrier to integration. The focus groups reiterated the importance of the role of Fife House services in reducing isolation and providing a sense of security which impacts health.

CONCLUSION: The provision of HIV related services at the housing program has positive impact on the lives of PHA's who access these support services. Knowing that the services are available should the need arise, enhances the sense of security for those not regularly accessing them. Networking with other service providers and increased programming around employment reintegration, presence of a qualified counselor and strategic display of HIV/AIDS information in the premises to avoid further stigmatization of the building were identified as areas requiring further consideration in order to support the residents.

P282
SURVEILLANCE AND MEDICALIZATION IN STREET-BASED HIV CARE: THE IMPLICATIONS FOR LONG-TERM ADHERENCE

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OBJECTIVE: The expansion of home-based and outreach HIV treatment programs bear the promise of considerable reductions in AIDS-related morbidity and mortality for individuals considered "hard-to-reach." The impetus for such programs has increased with recent changes to treatment guidelines and support for the expansion of antiretroviral therapy (ART) as a means of HIV prevention. We describe findings from the evaluation of a home care nursing team providing HIV care to unstably housed individuals in Vancouver's inner city, as an exploration of potential implications of the scale-up of outreach and street-based service delivery.

METHODS: Participant observation was conducted over fifteen months, along with serial open-ended interviews with the nursing team (n=5), referring physicians (n=3) and home care patients (n=10). Interviews were audio recorded and transcribed; an interpretive thematic analysis of field notes and interview transcripts was conducted.

RESULTS: Intense, regular care within an individual's private sphere is seen by recipients as both invasive and a demonstration of the care provider's commitment to the individual; environmental and interpersonal dynamics, along with a sense of exposure and lack of privacy, influence the extent to which individuals are willing to interact with the health team. Patients' desire for care, particularly ART, is dynamic and not reducible to psychological aspects of motivation or the logistics of substance use.

DISCUSSION: Street-based HIV care exists within a complex set of treatment guidelines, funding controls and institutional ties, and is enmeshed in the larger context of poverty, substance use, public versus private space, and the racialized demographics of HIV infection in Canada. Task-based and goal-oriented care prioritizes a biomedical paradigm, sometimes reinforcing these negative contextual dynamics. Long-term continuity of ART requires the health system and providers to re-orient toward patient-centered, flexible, and responsive care, rather than an efficiency-focused measure/manage/medicate approach.

P283
CONNECTING THE DOTS: SOCIAL DISPARITIES AMONG PEOPLE LIVING WITH HIV ON HAART

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BACKGROUND: High rates of adherence are fundamental to the success of HIV therapy. Social disparities, such as unstable housing, drug dependence, and poor mental health, create barriers to adherence. Directly Observed Therapy (DOT) is used to optimize adherence among vulnerable groups. Our objective is to evaluate the social disparities and clinical outcomes among persons enrolled in a DOT program.

METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ persons on highly active antiretroviral therapy. Participants are ≥18 years of age and recruited from the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Explanatory variables are collected through a comprehensive interviewer-administered interview. Clinical variables are obtained through linkages with the DTP. Bivariable analyses used Fisher's Exact Test for categorical variables and Wilcoxon Rank Sum Test for continuous explanatory variables. A multivariable confounder model was used to investigate the association between viral load suppression and being in the DOT program.

RESULTS: There were 481 LISA participants, of whom 64 were enrolled in a DOT program as of 07/08. In spite of social disadvantages, no major differences were found on clinical variables. DOT participants were more likely than others to have unstable housing (<0.001), be food insecure (0.030), receive provincial income assistance (<0.001), and be unemployed (<0.010). They were also more likely to be current illicit drug users (p<0.001), to have been recently (past 6 months) incarcerated (p <0.001) and co-infected with HCV (p <0.001). Clinical variables were similar including the rate of viral suppression (68% vs. 61%), CD4 > 200 (87% vs. 78%), and >95% adherence (61% vs. 61%) between DOT participants and others.

CONCLUSION: Preliminary findings demonstrate the success of this program, as DOT participants showed similar clinical outcomes when compared to their peers in the cohort. However, the self-adherent patient will only exist when the social inequalities and other 'root' causes are addressed.

P284
ADHERENCE TO ANTIRETROVIRAL TREATMENT: THE TRAJECTORIES OF ADOLESCENT LIVING WITH HIV SINCE BIRTH

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OBJECTIVES: Studies on adherence to antiretroviral treatments identify adolescence as an important period where treatment responsibility,

previously assumed by their parents, must be integrated by youth. The principal difficulties are associated with the treatment itself, the stage of HIV advancement and the patient's characteristics. This study explores how issues related to adherence evolve during the adolescent period.
METHODOLOGY: Within a qualitative chronological (longitudinal) research framework, 18 youths aged 13 to 22 years participated twice in individual semi-directed interviews within a three year interval at the Centre maternel et infantile sur le sida du CHU Sainte-Justine in Montreal. At the second interview, 11 youths were under treatment, 7 had stopped their treatment and 2 gave up their medical follow up. Six were now followed in adults clinics.
RESULTS: At the first interview, the difficulties reported were related to treatment (forgetting, time constraints, awful taste, side effects) and the relationship youth had with HIV (revealing of his/her difference, vehicle of his/her emotions). To counter these difficulties, certain youth in search for autonomy and independence mentioned seeking social support and developing reminder techniques and strategies in case of forgetting. At the second interview, the main difficulty encountered was related to the appearance of side effects (nausea, vomiting, diarrhea, headaches, etc.) following a change in treatment. In total, 7 youths mentioned having stopped their treatment, 6 of them without the supervision of their doctor. They attribute their decision to the significant side effects and the overwhelming quantity of medications. To overcome the difficulties of assiduity, the youth principally favour the support of their entourage.
CONCLUSION: Over time, the support of their entourage and the search for autonomy and independence facilitates the adolescents' process of adhesion but this can be threatened by the repercussions of side effects and treatment constraints.

P285
PERCEPTIONS OF HEALTH WORKERS ON COLLABORATING WITH TRADITIONAL HEALERS TO INCREASE HAART COVERAGE IN WESTERN UGANDA

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INTRODUCTION: In Uganda, despite increasing HAART access, treatment reaches only 40% of those who need it. This gap between HAART coverage and the number requiring treatment is especially apparent in rural areas, largely due to shortage of available health human resources. In order to meet the goal of universal HAART coverage, it will be necessary to engage non-conventional human resources like traditional healers (THs). The purpose of this study is to assess the feasibility of involving THs in HAART programs in western Uganda, which includes determining if health care workers (HCW) would be willing to work with THs, and assessing barriers to collaborations between formal health care and traditional medicine.
METHODS: In addition to surveying 219 THs, five semi-structured interviews with a variety of HCWs (counsellors, clinical officers and nurses) from 5 HAART programs in 2 districts in western Uganda were conducted. Data were reviewed/coded into themes.
RESULTS: HCWs confirmed that barriers to universal coverage included a lack of awareness in rural patients, and a lack of human resources available for monitoring treatment. All felt it would be beneficial to work with THs in general to expand HAART programs. They thought THs would contribute most effectively in rural outreach and sensitization programs. Many believed that although THs might be able to contribute by acting as treatment monitors, they were worried that THs would try to sell their own herbs in place of HAART, and that THs were not educated enough on the complexity of treatment. They also acknowledged that the concerns THs had were relevant, including the fear that HCWs would not respect them.
CONCLUSION: The generally positive perceptions of THs and the willingness of HCWs to work with THs means there may be a potential for collaborations between these groups to support the expansion of HAART in these districts.

P286
THE WOMEN'S HIV EMPOWERMENT THROUGH LIFE TOOLS FOR HEALTH (wHEALTH) INTERVENTION FOR HIV-POSITIVE WOMEN

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RATIONALE: HIV-positive women face complex medical demands and social challenges, including access to care. The risk for depression is significantly elevated and is associated with poor social support and quality of life. The HIV/AIDS paradigm shift from acute illness to chronic disease has enhanced the generation of multi-disciplinary care networks, including case management, to address the complex needs of PHAs.
OBJECTIVE: wHEALTH is a community-based research project studying how peer-delivered, strength-based case management affects the quality of life of HIV-positive women. Participants work with case managers utilizing strengths and resources to address life challenges. This intervention will be compared to Voices of Positive Women (VOPW) support programming.
METHODS: 176 women will be randomized to receive case management or VOPW support. Outcome measures will assess QoL at baseline, 6 and 9 months. Qualitative narratives will complement survey data. To date, 32 women from Toronto and Hamilton have enrolled.
RESULTS: Women enrolled in wHEALTH (n=30) were born in North America (17, 56.7%) and Africa (11, 36.7%). 12 (40%) women have completed college/university, however 43% are relying on long-term disability for income. Other income sources include employment (36.7%) and Ontario Works (16.7%). 70% (21/30) of women who chose to enroll in wHEALTH are active ASO users, of which 16 (53.3%) have accessed ASOs for over a year. Baseline physical and mental health summary scores were 42.6 (±13.3) and 42.5 (±13.2) respectively. 13 women (43.3%) have been diagnosed with a mental illness, citing depression (26.7%), anxiety (6.7%) and substance use disorder (6.7%). Only 4 (13.3%) reported current treatment for a mental illness; and 6 (20%), 7 (23.3%) and 9 (30%) women had sought recent care from a counsellor, psychiatrist or case manager, respectively.
CONCLUSIONS: A significant proportion of women in wHEALTH are living with a mental illness, however few women are receiving treatment and seeking care. wHEALTH's goal is to provide evidence for developing innovative support services for HIV-positive women and to identify effective ways to improve access to and retention in care.

P287
IMPLEMENTATION OF A STUDENT INITIATED PRECLERKSHIP HIV ELECTIVE

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BACKGROUND: The literature indicates North American medical students require more comprehensive HIV training. To address these needs, eight University of Toronto (UofT) medical students developed The Preclerkship HIV Elective (PHE): an extracurricular program aimed at increasing medical students' HIV knowledge and preparing them to serve affected populations.
METHODS: PHE was developed in partnership with the Ontario HIV Treatment Network (OHTN), and through consultations with AIDS service organizations and Faculty of Medicine professors. The goals are to address important issues in HIV care and supplement medical curriculum content. Eighteen second-year medical students are participating in PHE, consisting of lectures, small group sessions, clinical observerships, community placements, independent reading assignments, and a counseling/testing workshop. The lecture component is available to all health profession students. Following completion of HIV content in the preclerkship medical curriculum and prior to the start of PHE, second-year medical students completed a self-evaluation of HIV knowledge, interest and level of preparedness. PHE participants will complete this questionnaire again upon PHE completion to facilitate program evaluation. Feedback on participant satisfaction is collected.
RESULTS: 65.1% of respondents (n=63) felt they had inadequate HIV training. 69.1% (n=55) were interested in HIV medicine. An interim process

evaluation after five lectures revealed mean attendance of 70 (σ=12) students, mainly first- and second- year medical students (16% of UofT preclerkship medical students), and mean satisfaction of 96.3% (σ=3.1%).
SIGNIFICANCE: Preliminary results demonstrate significant student enthusiasm for additional HIV learning opportunities. Student-run initiatives can be used to supplement medical curriculum content and program feedback may be used to advocate for changes in medical curricula. Factors for success include student leadership and interest, community support, and faculty mentorship. The OHTN will use pilot data from this initiative to explore how to expand PHE programs and build capacity in interdisciplinary healthcare and support across Ontario.

P288
HIV/AIDS AND MENTAL HEALTH: AN INTER-PROFESSIONAL LONGITUDINAL LEARNING SERIES

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BACKGROUND: In 2006 Casey House, a specialty hospital, established Mental Health and HIV/AIDS: The Series, an inter-professional educational initiative for health care providers. The impetus for the program came from a need identified by front line staff from nursing, social work, psychiatry and allied health professionals. The goal was for clinicians to have a forum for enhancing knowledge of mental health, best practice guidelines, treatment options and resources in order to provide informed care for clients living with HIV/AIDS and presenting with complex mental health concerns.
OUR APPROACH: The approach to initiating the project was collaborative, drawing on the expertise of inter-professional clinicians at Casey House, St. Michael's Hospital, ASO's and in the mental health community. Noted mental health specialists, community partners and associates working in the area of HIV/AIDS and Mental Health as well as Casey House clinicians were invited to present workshops, seminars and case studies. A partnership was established with the Ontario HIV Treatment Network to facilitate filming of the series in order to create greater access to clinicians across the country. An annual full day symposium and a monthly lecture series was established; ongoing evaluation data informed programming as the series developed.
Evaluation and Implications of the Model: Much has been gained from knowledge exchange, review of current practices, inter-agency communication and establishing and maintaining a forum for ongoing professional development, conversations, skill building, and growth. The workshops and seminars have been evaluated to inform programming and further data collection is underway. Inter-professional dialogue through conference presentations has been established and we are reviewing opportunities for publication.
In the presentation/poster we will discuss the Mental Health Series from concept to implementation and explore implications for collaboration and knowledge transfer.

P289
EFFECTS OF COUNSELLING ON THE PSYCHOSOCIAL ISSUES AMONG HIV

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Although Uganda is cited as the most successful Country in the Sub Saharan Africa in combating the HIV epidemic in prevention and care. The Psychosocial support services are still a challenge among Children and Adolescent with HIV, child Headed families more vulnerable. Existing evidence shows that, those children with poor psychosocial support never adhere well to drugs.
DESCRIPTION: In 2006, Child play centres were initiated for HIV positive children and care providers to access relevant information about HIV care and prevention. Play therapy is used to encourage children to open up about adherence issues they face and that challenge them. TASO thought it would be important to address the psychosocial support needs of those children who are HIV positive or negative through Child Care Centres.
LESSONS LEARNED

- Identifying of Adolescents and Children psychosocial effects promotes Treatment Adherence.
- Children and Adolescents open-up when the environment is conducive.
- Good Family Support System helps them to adherence and continue with education.
- Equip young people with facts about HIV/AIDS; encourages them to support one another as regards the psychological and social effects of HIV/AIDS surrounding their families.

RECOMMENDATION

- Scale up sustainable household interventions to address OVC challenges.
- Improve and promote access by developing special intervention targeting Adolescents on treatment.

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WITHDRAWN

P291
ARE WE MEETING THE NEEDS? AN EXAMINATION OF SUPPORTIVE HEALTH SERVICES FOR INDIVIDUALS LIVING WITH HIV RECEIVING HAART

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BACKGROUND: Agencies providing supportive services can improve quality of life for HIV+ individuals and on many occasions have been life saving for persons with psychosocial problems such as illicit drug use and mental health disorders. Our objective is to examine regular service use and non-use among a cohort of HIV+ individuals on highly active antiretroviral therapy (HAART).
METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ individuals on HAART. Explanatory variables are collected through an interviewer-administered survey and clinical variables are collected through a linkage with the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Bivariate analysis was conducted using fisher's exact test to compare individuals who regularly use service with those who do not use service. Multivariate analysis was conducted using logistic regression to identify independent predictors of not using services.
RESULTS: Of 510 LISA participants, 426 (83.5%) reported using at least one agency within the past 3 months. There were 139 different agencies identified and one agency was reported by 30% of participants. Participants using agencies were more likely to have lower education ($p < 0.001$), higher stigma ($p=0.003$) and higher unemployment ($p < 0.001$). They also were more likely to be food insecure ($p < 0.001$) and to be current illicit drug users ($p < 0.001$). Those using services showed poorer clinical outcomes including CD4 <200 ($p=0.012$), unsuppressed viral load ($p < 0.001$), HCV co-infection ($p < 0.001$) and adherence <95% ($p < 0.001$). Multivariate analysis showed participants not using agencies were more likely to be employed (AOR 2.20), food secure (AOR 2.48), not receiving Provincial Income Assistance (AOR 0.25) and never using or not currently using illicit drugs (AOR 0.15, AOR 0.58, respectively).
CONCLUSIONS: These findings demonstrate that vulnerable groups use supportive services, yet challenges remain in making improvements to their social and clinical status. This may represent a disconnect between service use and intended outcomes. Additional studies could evaluate the direct impact of specific programs within these agencies such as meal programs, housing referrals and medication supports.

P292
PERCEPTION OF OVERALL HEALTH RESPONSIBILITY: PATIENT-PHYSICIAN RELATIONSHIPS AMONG HAART RECIPIENTS IN BRITISH COLUMBIA

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BACKGROUND: Medical information is increasingly available to patients because of technological advances such as the Internet and growing popularity in population and public health programs. As a result, patient's roles may be shifting and they may be making more assertive decisions in medical and treatment options. Our study explored patient perceptions about physician-patient responsibility for overall health and

well-being (health) among a cohort of individuals living with HIV on highly active antiretroviral therapy (HAART).
METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ persons on HAART. Participants are ≥18 years of age and recruited from the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Explanatory variables are collected through a comprehensive interviewer-administered interview. Clinical variables are obtained through linkages with the DTP. Categorical variables were compared using the Fisher's Exact Test and continuous variables were assessed using the Kruskal-Wallis Test. Two multivariable logistic regression models were used to determine independent predictors of perceiving health to be more physician responsibility and more patient responsibility.
RESULTS: There are 510 patients in the LISA cohort, of whom 55% feel health is more patient responsibility and 15% feel health is more physician responsibility. A multivariable analysis showed Aboriginal (AOR 2.00, 95% CI 1.15-3.47) and directly observed or mutually assisted therapy use (AOR 2.09, 95% CI 1.21-3.60) to be associated with perceiving health being more a physician responsibility. Being a women (AOR 0.54, 95% CI 0.34-0.86) and being Aboriginal (AOR 0.57, 95% CI 0.38-0.85) are associated with less likely perceiving health to be patient responsibility. Having ever used marijuana (AOR 1.52, 95% CI 1.03-2.24) is associated with perceiving health to be more patient responsibility.
CONCLUSION: Physician-patient relationships are central to patients' success with HAART. As antiretroviral therapy and care evolves, so must these relationships. Understanding different perceptions and ensuring good communication between physicians and patients could improve health care delivery by creating mutual expectations and shared treatment choices.

P293
THE ROLE OF STABLE HOUSING AND FOOD SECURITY IN TREATMENT SUCCESS AMONG PEOPLE ON HAART

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OBJECTIVE: To determine the impact of stable housing, food security and other sociodemographic, quality of life and clinical variables on perceptions of neighbourhood among people receiving HAART.
METHODS: Surveys conducted by an interviewer were administered to participants in the LISA (Longitudinal Investigations into Supportive and Ancillary health services) study, who were recruited from the Drug Treatment Program at the BC Centre for Excellence for HIV/AIDS. The primary outcome measure was neighbourhood perception, which was evaluated in terms of three components: neighbourhood problems, neighbourhood cohesion and relative standard of living within the neighbourhood. Univariable explanatory models were tested using food security and stable housing as primary explanatory variables and a panel of additional patient characteristic and quality of life variables. To control for confounding, multivariable linear regression and proportional odds logistic regression with a confounder model selection process was conducted.
RESULTS: Of 510 participants 27% were food secure and 65% resided in stable housing. In the multivariable model, controlling for confounders, perception of neighbourhood problems decreased by 8% and 13% while perception of neighbourhood cohesion increased by 7% and 6% among those who were food secure and in stable housing, respectively. Food security was also associated with a better perception of relative standard of living in the neighbourhood. Having CD4 counts of >200 and increased viral load suppression were both associated with more positive perceptions of neighbourhood problems (10% and 12%, respectively).
CONCLUSIONS: Our results demonstrate that food security and stable housing are linked to better clinical outcomes and improved perceptions of neighbourhood among individuals receiving HAART. This suggests that food security and stable housing may be important neighbourhood-level risk factors for poor treatment outcomes for people living with HIV/AIDS and should be considered in the implementation of drug treatment programs.

Social Sciences – Individual-level/ Behavioural Risks and Interventions to Prevent HIV

P294
IMPLEMENTATION OF THE FIRST PILOT INTERVENTION FOR LATINO MSM NEWCOMERS TO CANADA

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Latino MSM have been showing the steepest rise in HIV diagnoses of the 6 ethnocultural groups tracked in Ontario, accounting for the largest proportion of HIV diagnoses of the 6 in 2004, and continuing to rise faster than the MSM average through 2006. The intervention consisted of an initial day-long session followed by 4 2-hour evening sessions that addressed the topics of: immigration experience and services, sexual orientation and homophobia in family and culture, HIV prevention and STIs, Toronto gay scene, bathhouses and casual sex, dating and relationships. Twenty Latino MSM, who were within 3 years of arriving in Canada, attended the first session. In the pre-test sexual risk questionnaire, 3 (of the 15) reported UAI with a regular male partner, 1 with regular male and female partners, and 2 with a casual male partner of unknown serostatus. At post-test, 2 reported UAI with a regular seroconcordant male partner and none with a casual partner. One of the post-test regular partners was in an open relationship of more than 5 years; the other a monogamous legal marriage. The mean score on the UCLA Loneliness scale decreased from 43.27 (sd = 11.29) on the pretest to 40.47 (sd = 8.37) on the posttest. Given the small sample size, the difference between the two means did not reach statistical significance (t = 1.09, df = 14) using the paired sample T test. A research assistant who was not involved with the intervention conducted exit interviews that showed a high level of enthusiasm, a strong sense of group solidarity, requests for more sessions, and interest in additional information on STIs. Participants subsequently organized and facilitated additional sessions with the assistance of the Centre for Spanish Speaking Peoples. Overall this first intervention for Latino MSM in Canada shows movement in the right direction and considerable potential to be effective and well liked by participants.

P295
EXPERIENCES OF GROUP SEX AMONG YOUNG MALE QUEBECERS OF HAITIAN ORIGIN: HIV RISK ENVIRONMENT AND SOCIAL CONTEXT

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OBJECTIVE: To describe the HIV Risk environment and social context of group sex among young male Quebecers of Haitian origin in Montreal.
METHOD: From May to October 2008, we conducted in-depth interviews with 15 young male Quebecers, aged between 15 and 25 years, born in Haiti or having at least one parent born in Haiti (YMQH). Participants were approached by staff members from community groups doing community-level HIV prevention interventions for vulnerable youth in Montreal. The interview took approximately 90 minutes. Data from interview transcripts were codified and a content analysis was performed.
RESULTS: 11 of our participants mentioned having participated in group sex at least once. Three main themes emerged from the participants' interviews on this topic: GIRLS' CONSENT TO SEX, while saying that girls are willing to have group sex, some boys explained that they offer drug/alcohol or they lie to the girls in order to convince them to accept group sex; MOTIVATIONS AND REASONS FOR HAVING SUCH PRACTICES ranged from simply liking it to wanting to show their friends they are not "gay"; STI RISK MANAGEMENT STRATEGIES, even if for most of the participants group sex was not a risky practice, some of them specified that they used condoms (9), others specified that they personally chose the type of intercourse that they had (oral or vaginal) (6) and others, their partners (1).
CONCLUSION: Sexual education and sexually transmitted infections (STI) prevention programs designed for YMQH should talk specifically about group sex and the possible risks associated with this practice.

Studies are needed to further examine these YMQH's sexual practices in order to formulate specific HIV prevention interventions and to reduce the number of STI cases among this vulnerable group.

P296
CAUSAL HETEROGENEITY IN HIV-RISK BEHAVIORS AMONG MEN WHO HAVE SEX WITH MEN (MSM): A QUALITATIVE STUDY

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OBJECTIVE: To document the diversity of paths leading to HIV-risk behaviors and to HIV infection.
METHOD: In-depth interviews guided by a timeline follow-back approach were conducted with 24 HIV-positive MSM. The men were aged 23 to 60 years old (mean age=40) and had been HIV-positive for 6 months to 12 years (mean=1.5).
RESULTS: Five major paths to HIV infection were identified. In four of them, unprotected anal intercourse was clearly identified by the participants as the vector for HIV transmission, while in a fifth path participants reported no unprotected anal intercourse or no anal activity. Among the fourth path related to unprotected anal intercourse, the most common is characterized by the occurrence of many stressful life-events (e.g. mourning) over a short period of time that influenced sexual behavior in such a way that protecting oneself appeared secondary in comparison to the need to cope with the emotional upheaval. Another path is characterized by the discovery of a new sexual lifestyle or subculture (e.g. barebacking networks) which leads to sexual risk-taking. A third path to sexual risk-taking and to HIV infection is characterized by the abandonment of condom-use in a love relationship where the condom appears as an obstacle to love and intimacy. A fourth path consists of MSM who used condoms inconsistently and with little regard to their partners' serostatus. The fifth path characterizes MSM who reported having used condoms consistently for anal intercourse or avoided any anal activity. While some of them suggest that oral transmission could have occurred, others couldn't identify, at the time of the interview, how they had become infected.
CONCLUSION: Narrative accounts of sexual risk-taking and HIV infection show heterogeneity in paths toward HIV-risk behaviors and HIV infection. Prevention campaigns must take into account this heterogeneity by diversifying their strategies and messages.

P297
DISORDERED EATING AND SEXUAL RISK AMONG GAY AND BISEXUAL MEN

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The purpose of the study was to examine risk for disordered eating behaviors/attitudes and associated sexual risk among 510 racially diverse gay and bisexual men (GBM) attending Toronto's 2008 LGBT Pride Festival. Specifically, this study used a survey design to: 1) estimate the prevalence of disordered eating risk and sexual risk, and 2) to identify demographic and psychosocial factors associated with these risks.
Logistic regression analysis was conducted to determine whether the following demographic predictors (education, age, race, HIV status, relationship status), and psycho/social indicators (depression, internalized homonegativity, drive for muscularity, body mass index [BMI], risk for eating disorders) – are likely predictors of engaging in serodiscordant unprotected anal intercourse (SDUAI). Logistic regression analysis was also used to examine whether the same predictors (except disordered eating) can be used to predict risk for eating disorders.
SDUAI was reported by 22% of respondents. Asians were significantly less likely than Whites to engage in SDUAI (OR =0.39; 95%CI =0.18, 0.85, p = 0.02). Compared to HIV-negative men, HIV-positive men were 2.03 more likely (95%CI =1.07, 3.84, p = 0.03), and HIV status-unknown men were 4.16 times more likely (95%CI=1.86, 9.33, p=0.001) to engage in SDUAI. Depression level had a borderline significance as a predictor of engaging in SDUAI (p = .055). The remaining factors were not statistically significant.
Disordered eating risk was reported by 13% of respondents. Individuals with a college degree (OR=0.23; CI=0.075, 0.70, p = 0.009) were less likely than those without a degree to be at risk for disordered eating. Drive to muscularity (OR=1.03; 95%CI=1.01, 1.05, p = .01) and age (OR=0.97; 95%CI=0.94, 0.99, p = 0.05) were significant predictors of eating disorder risk. Race, sexual risk, HIV status, internalized homo-negativity and depression level were not significant predictors of risk for eating disorder. GBM are at heightened risk for eating disorders, but this does not appear to be associated with sexual risk. Age, education and drive to muscularity are associated with eating disorder risk.

P298
POSITIVE WOMEN POSITIVE SPACES: A COMMUNITY BASED INITIATIVE TO ADDRESS TRAUMA AND VIOLENCE AND HIV RISK AMONG ABORIGINAL WOMEN

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ISSUES: Aboriginal women living in, or accessing services in the Vancouver Downtown Eastside (DTES) face structural inequities, violence and are at HIV risk for and other sexually transmitted diseases. Aboriginal women are more likely to live in an environment where substance abuse and violence combined with racial discrimination and sexism increases the risk of violence, victimization and HIV infection.
DESCRIPTION: Vancouver Native Health Society (VNHS) has created Positive Women Positive Women Spaces (PWPS) an afternoon clinic for women where they can freely access medical care, social support, treatment, prevention, education and referrals to community resources and services. The program combines traditional health care strategies with culturally sensitive gender appropriate community-based initiatives that concomitantly address health service access, personal autonomy, and the contemporary effects of colonialism through outreach, education, support groups and capacity building.
LESSONS LEARNED: Since the inception of the PWPS program over 250 women have participated in and benefited directly from PWPS. The program has succeeded in creating a safe and supportive environment for women to access critical primary health care services with a 2% increase in the number of women's visits (i.e. 533 more women patient visits in one year). Access to services such as Alcohol and Drug counseling has increased since the initiation of PWPS. In addition, many referrals were made to other services and programs. During the evaluation phase women expressed how PWPS encouraged empowerment and provided much needed support to take control of one's life.
NEXT STEPS: Our results indicate that comprehensive multifaceted interventions address the inter-related issues of pain, trauma and violence and increase access to resources, which significantly improve health outcomes for highly marginalized women.

P299
IS HIV VACCINE TRIAL PARTICIPATION ASSOCIATED WITH INCREASES IN SEXUAL RISK BEHAVIOURS?

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OBJECTIVE: To examine trends in risk behaviours among participants enrolled in a prophylactic Phase-IIb HIV-1 vaccine trial.
METHODS: Volunteers enrolled in the trial were invited to participate in a longitudinal socio-behavioural study. Trial selection criteria were: 18-45 years of age; HIV-1 seronegative; ≥2 sexual partners or unprotected sex, past 6 months. Participants completed self-administered baseline, 6- and 12-month questionnaires. We assessed trends in risk behaviours over time, and associations between risk behaviour trends and sociodemographics, baseline beliefs and motivations utilizing chi-squares.
RESULTS: Participants' (n=30) were all male, mean age=38.9 years; average monthly income=$2900. Seventy-percent had some college/university education; 80% were employed. From baseline to 12 months, most (40%; n=12) reported no change in number of sexual partners (past 30 days), 13% (n=4) reported more partners, 13% (n=4) reported fewer partners; 33% (n=10) displayed no trend. Regarding condom use for anal sex with a primary partner, 47% (n=14) didn't change condom use, 17% (n=5) used condoms less, 10% (n=3) used condoms more, and 27% (n=8) displayed no trend. The majority (55%; n=16) didn't change condom use with casual partners over time, 7% (n=2) decreased condom use, 31%

(n=9) improved condom use; 7% (n=2) displayed no trend. Most (70%; n=21) indicated no change in condom use during last anal sex at baseline and 12 months. Trends in risk behaviour were not significantly associated with participant demographics, belief that the test vaccine would be effective, or belief that joining the trial would provide HIV protection.
CONCLUSION: HIV vaccine trial participation was not associated with increased sexual risk behaviours over time. Informed consent procedures, risk behaviour counselling and HIV testing in the context of the trial appear to have been effective in preventing risk behaviour increases; nevertheless, continued caution is warranted given a subset of volunteers who engaged in increased behavioural risk over time.

P300
PROMOTING COMPREHENSIVE SEXUAL HEALTH: PREDICTORS OF DUAL PROTECTION USE AMONG ADOLESCENTS

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OBJECTIVES: Dual protection, the use of condoms and a hormonal method, is the optimal method to promote sexual health. Little is known about the factors that predict dual protection among adolescents; this research seeks to address that gap.
METHODS: Utilizing national data from the Canadian Youth, Sexual Health, and HIV/AIDS study (CYSHHAS), classification tree analysis (CTA) was conducted to explore which factors predicted dual protection use at last sexual intercourse among adolescent females (n=1227) and males (n=1022) in grades nine and eleven. CTA repeatedly partitioned participants by selecting significant predictor variables to create groups most different on dual protection utilization.
RESULTS: Almost all participants were born in Canada (boys, 95%; girls, 97%), most spoke English at home (boys, 81%; girls, 78%), and the majority considered their families to be of average wealth (boys, 62%; girls, 70%). One-third of all participants indicated they used dual protection at last sexual intercourse. Dual protection use was highest for the group of males who: indicated religion was not important to them, believed condoms to be the responsibility of both partners, had sex frequently, and were older than 12 at first sexual experience. Dual protection use was highest among the group of girls who: would not have sex with someone who did not want to use a condom, lived with both mother and father, considered medical professionals their main source of STI advice, and had previously been tested for STIs. The final CTA models accurately predicted protection method among 69.6% of adolescent males and 69.2% of adolescent females.
CONCLUSIONS: Access to accurate sexual health information and services, positive condom intentions, and delayed sexual experience were associated with dual protection use among male and female adolescents. Integrating HIV prevention efforts into the broader field of adolescent sexual health is a challenge; understanding factors that support the use of dual protection to concurrently prevent unplanned pregnancy and HIV/STIs is vital to the development of prevention efforts that comprehensively promote positive adolescent sexual health.

P301
DEVELOPMENT OF A CLIENT CENTERED INTERVENTION TARGETED TO GAY MEN ACUTELY INFECTED WITH HIV IN BRITISH COLUMBIA (BC)

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BACKGROUND: Acute HIV infection (AHI) is a time of brief but substantially increased risk for HIV transmission. The challenge of AHI is that it is not detectable through routinely available HIV antibody testing in BC but new testing technologies, which do have this ability, present new prevention opportunities.
METHODS: We conducted key informant interviews with a sample of care providers and community leaders who serve the gay community in BC to guide the development of an enhanced intervention for gay men with AHI. Interviews were recorded and transcribed and then analyzed using a thematic approach.
RESULTS: Informants felt that the intervention should be delivered by counselors with an in depth awareness of gay culture and sexuality; an ability to provide emotional support to persons with AHI; and that this would provide the basis for clients with AHI to utilize knowledge gained in counseling to develop skills and self-efficacy in relation to safer sex. Informants also felt that diagnosing MSM with AHI could potentially lead to an increased stigmatization of this population and emphasized that sensitive language be used to describe AHI. Caution was expressed against using words such as "highly" or "hyper" infectious given the potential to increase feelings of shame, to compound issues of stigma, and increase barriers for disclosure.
CONCLUSIONS: The information provided has led us to develop an intervention using a peer based model where gay HIV positive counselors, located within a persons' with HIV/AIDS (PWA) support group, will provide supportive counseling, in collaboration with clinic based services, to persons with AHI soon after their diagnosis and during their acute HIV infection period. Future research will include interviewing HIV positive gay men to gain further insights about this intervention and monitoring the progress of this intervention in subjects enrolled into a longitudinal study of persons with AHI.

P302
WITHDRAWN

P303
HARASSMENT FOR NONCONFORMITY TO GENDER NORMS AND UNPROTECTED ANAL INTERCOURSE WITH UNKNOWN HIV STATUS PARTNERS AMONG MEN WHO HAVE SEX WITH MEN: ANXIETY AS A MEDIATING VARIABLE

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BACKGROUND: Worse mental health outcomes among MSM are associated with increased unprotected anal intercourse (UAI) and with homophobic childhood experiences such as being Harassed for Nonconformity to traditional Gender Norms (HNGN). However, little work has examined whether HNGN may be a root cause of both poor mental health and UAI among MSM. The primary objective of the present study is to examine if and how HNGN is associated with UAI among MSM.
METHOD: 201 MSM (48% HIV+) were recruited from community and clinical settings. HNGN was assessed at baseline via a 5-item HNGN Scale (α= .94; e.g., "I was teased for not being 'masculine enough'"). Mental health was assessed at baseline via the Hamilton Anxiety and Depression Scales. Insertive and receptive UAI over the past 6 months were assessed at 6-months following the baseline assessment. Logistic regressions and Pearson correlations examined associations between HNGN, mental health outcomes, and UAI. A hierarchical logistic regression examined if poorer mental health outcomes mediated the relation between HNGN and adult UAI, controlling for HIV status.
RESULTS: HNGN was associated with higher depression and anxiety, and with UAI with unknown-serostatus partners. Both depression and anxiety were associated with UAI with unknown-serostatus partners. Variables were not associated with UAI with serodiscordant status partners. Controlling for HIV status, anxiety completely mediated the relation between HNGN and insertive UAI with unknown-status partners. Anxiety also partially mediated the relation between HNGN and receptive UAI with unknown-status partners.
CONCLUSIONS: Findings demonstrate that one of the primary links between homophobia and negative mental and sexual health among MSM is through HNGN. Increased ties between HIV prevention services and mental health services are warranted. Findings also suggest a benefit for anti-homophobia programs in primary and secondary schools, as poor mental health and increased UAI may be partially attributable to childhood experiences.

P304
HIV PREVENTION IN THE INTERNET AGE: PERSPECTIVES OF MSM

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BACKGROUND: The Men, Internet and Sex with Men (MISM) Study was a qualitative inquiry into the role of the Internet in the sexual lives of men who have sex with men (MSM). There are calls for HIV prevention to become more responsive to men's own experiences and perspectives. Accordingly, a component of the MISM Study sought men's opinions on the HIV prevention materials they had encountered and how they thought HIV prevention might be improved.
METHODS: 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).
RESULTS: Numerous themes emerged from the participants' views on HIV prevention and how it may be improved, including a need for prevention initiatives which better resonate with men's own experiences; a need to address broader structural issues involved with sexual risk behaviour; and a need to better utilize unique features of the Internet for HIV prevention. For these men, the Internet functioned as a "formal" vehicle of health communication (e.g., through public health websites) as well as a more "informal" vehicle (e.g., through men's discussions about sex with other men).
CONCLUSIONS: Effective HIV prevention requires initiatives which not only respond to men's own prevention needs, but also respond to the setting in which they are delivered. The findings provide insight that is relevant to both online and offline prevention, and the findings underline the need for innovative and effective online prevention initiatives. It is important to recognize both the formal and informal roles the Internet plays in delivering information about safer sex and the transmission and prevention of HIV and sexually transmitted infections.

P305
LESSONS LEARN FROM THE IMPLEMENTATION OF CHÎ KAYEH, A SEXUAL HEALTH EDUCATION PROGRAM FOR HIGH SCHOOL STUDENTS FROM TWO COMMUNITIES OF EEYOU ISHTEE (JAMES BAY CREE TERRITORY)

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OBJECTIVES: Describe the contextual factors influencing the implementation of Chî Kayeh, a sexual health education program for high school students from the Eeyou Ishtee community (James Bay Cree territory). Following an exploration study on youth's beliefs towards sexuality and HIV prevention and a vast consultation in the communities, this program was implemented in two communities in 2006-2007 and 2007-2008.
METHODOLOGY: The main data collection methods used to document the implementation of the Chî Kayeh were semi-structured interviews realized with teachers (n=8) and key informant of the school team (n=8) at the end of the first and second years of implementation. The participants were asked to explain what, from their point of view, had affected positively and negatively the implementation of the program. Nvivo7 was used for content analysis.
RESULTS: Two categories of factors modulated the implementation of the program. The first category concerned factors related to the physical and socio-cultural environment such as climate conditions, cultural events and death in the community. Such factors engendered a high level of absenteeism and a high number of school closing, modulating the teacher's capacity to deliver the program as planned. The second category of factors related to the structure of the program and to the Cree students' characteristics. For participants, the content of the program was culturally adapted, but some of the proposed educational techniques were not adapted to "the way of being students" of Cree youth. Thus, a number of youth were uncomfortable with team work, oral presentations and peer learning.
CONCLUSION: Following these formatives results, the structure of the program (number and organization of lessons, educational techniques) was modified. Cultural adaptation of a program suggests that needs assessment should also include an in deep analysis of the students' learning styles and of the physical and socio-cultural environments characterizing the implementation settings.

P306
DOING STUPID SMART: MODERATION, MASCULINITIES AND INTOXICATED SEX

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Sex under the influence of drugs and alcohol is associated with higher rates of sexually transmitted infections and HIV. While research on women, gay men, injection drug users and other marginalized groups have identified socio-cultural factors that exacerbate risks of disease transmission, little has been documented about socio-cultural factors that affect heterosexual young men and their sexual partners. A qualitative study, undertaken in Whistler, BC, investigated the role of social contextual factors such as gender and drug-culture in relation to intoxicated sex practices of men ages 19-31 years old. In-depth interviews were conducted with 16 men, (15 heterosexual-; 1 gay-identifying) to gather a total of 35 narratives of sex under the influence of drugs and alcohol. An analysis revealed two primary groups of narratives: public stories and private stories. Public stories reproduced dominant ideals of masculinity that valourized risk-taking associated with intoxicated sex while private stories challenged notions of men's invulnerability to harm. However, underlying these narratives was an emphasis on moderation as an ideal characteristic of masculinity. Findings suggest that gender sensitive interventions for recreational substance-using men must incorporate practices of moderation to bolster and diversify positive images of young men and risk-taking.

P307
CAPACITY BUILDING IN HIV/AIDS PREVENTION: A CARIBBEAN FAITH-BASED INTERVENTION

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Faith Based Organizations (FBOs) are an integral part of human existence. Historically, FBOs have played a key role in addressing social issues in societies. More recently, they have played a role in people's social and psychological health and well-being. The impact of HIV and AIDS has influenced FBOs have response within their communities. With about five percent of all HIV and AIDS cases located in Latin America and the Caribbean (UNAIDS, 2008), it is clear that the region is hard hit by the epidemic. The primary mode of transmission in the Caribbean is heterosexual contact as demonstrated by the increasing number of married and pregnant women who have tested HIV positive (67%). This calls for an intervention specifically targeted at women through education, empowerment and prevention services within the appropriate cultural context.
This paper describes a Jamaican faith-based intervention that was implemented with financial support from the World Association for Christian Communication (WACC) based in Toronto, Canada. The project was implemented in collaboration with the University of the West Indies and included people living with HIV and AIDS (PLWHA). The overall goal of the project was capacity building for religious leaders across Jamaica in communication and behavior change for HIV and AIDS prevention within their communities and to develop a strategy for addressing stigma. The goal would be achieved through equipping the leaders with understanding of the virus and the disease and passing on the skills to effectively communicate sensitive issues related to sex, sexuality and sexually transmitted infections and diseases, including HIV and AIDS. The paper will describe some of the findings from the needs assessment, the process of program planning and implementation, and lessons learned from the Caribbean project that will be applicable to other projects that use the FBO approach in addressing the HIV and AIDS epidemic.

P308
CONTRADICTIONS, TENSIONS AND POSSIBILITIES: CRITICAL REFLECTIONS ON A FAITH-BASED SCHOOL HIV PREVENTION PROGRAMME IN SOUTH AFRICA

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BACKGROUND: There is growing recognition of the crucial contributions that faith-based organisations (FBO) can make to HIV prevention in Southern Africa. However, there are also critiques of the abstinence-oriented approach that underpins many FBO programmes, as well as the appropriateness of faith messaging when offered in secular school settings. We evaluated one such programme. Our objective here is to reflect upon the complexities inherent in the faith-based orientation of a school-based HIV prevention programme. The contradictions emerging from our data offer a window into the opportunities and challenges facing faith-based approaches to HIV prevention.
METHODS: This critical analysis is based on our experience evaluating a 5-year abstinence-focused school-based intervention operating in a severely resource-deprived community in Durban, South Africa. Our fieldwork consisted of a survey administered to 809 Grade 11s across four schools, and 11 focus groups conducted with learners, parents, teachers and programme facilitators. We reflect on the contradictions within our findings to develop a more sophisticated understanding of the opportunities and challenges facing faith-based approaches to HIV prevention programming.
RESULTS: Our data revealed several disconnects related to the programme's approach, including: (1) Participants' enthusiastic support of the abstinence-based approach to HIV prevention despite awareness of the structural determinants of HIV susceptibility in their community. (2) Reluctance to promote condom use despite evidence of its efficacy. (3) Good-versus-bad framing of behaviour choices and implications for HIV prevention when people are unable to make "good choices" and (4) The tension between defining service provision as a "calling" versus a job.
CONCLUSION: Faith-based responses to HIV predominate worldwide and present a crucial strategy for reaching people in Southern Africa. 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 programme-planning and policy-making.

P309
DETERMINANTS OF HEALTH AMONGST PEOPLE LIVING WITH HIV/AIDS IN ONTARIO WITH AND WITHOUT HCV CO-INFECTION: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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BACKGROUND: The purpose of this study is to examine the differences and impact of the determinants of health in people with HIV and HCV as compared with those with HIV alone.
METHODS: As part of our CIHR-funded HIV, Housing and Health study in Ontario – The Positive Spaces, Healthy Places Study – we enrolled 605 people living with HIV from across Ontario and followed them over one year using both quantitative health surveys and qualitative interviews conducted by peer research assistants. At one year, 510 were 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 ($p < 0.01$) proportion of HIV/HCV participants were heterosexual (RR=3.0), Aboriginal (RR=2.3), previously incarcerated at least once (RR=25.7), used harmful levels of alcohol and drugs (RR=2.0 and 10.9, respectively), more depressed (RR=2.3), and had experienced homelessness (RR=4.7) and discrimination (RR=1.9) in trying to get housing, lived outside of the GTA (RR=0.2), as compared to those with HIV alone. Those with HIV/HCV were also significantly ($p < 0.01$) less likely to have completed high school (RR=3.7), to be employed (RR=0.4), to be on antiretroviral treatment (RR=0.4), and had lower overall health and mental health compared with those with HIV alone. Multivariate modeling revealed that sexual orientation, education, harmful substance use, and living outside of the GTA were the main multivariate predictors.
CONCLUSIONS: In our study, 20% participants were co-infected with HV and HCV. People with HIV and HCV are facing significant challenges in their health over those with HIV alone in accessing and maintaining stable housing. Interventions for housing and substance use are critically needed to address the health and well being of people with HIV/HCV co-infection in Canada.

P310
COGNITIVE REHABILITATION IN HIV: A CASE STUDY DEMONSTRATING THE BENEFITS OF THE BRAIN FITNESS PROGRAM

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BACKGROUND: Cognitive impairments in attention, learning and speed of processing are common in people living with HIV, occurring in approximately 30-50% of the population. While HAART has had a dramatic impact on health outcomes, survival and reducing AIDS dementia, mild neurocognitive disorders persist in as many as 30% on treatment.
METHODS: We evaluated the potential benefits of the Brain Fitness Program (BFP) Classic, a computerized and self-administered cognitive rehabilitation intervention. The case studied was a 52-yr old well-educated gay man with a previously documented diagnosis of HIV-Associated Cognitive-Motor Complex (moderate in severity). Comprehensive neuropsychological testing and symptom questionnaires were administered prior to and after 8 weeks of the BFP; the BFP intervention consisted of 1 hour of exercises 5 days per week for a total of 40 session. The BFP uses six computer-based exercises for use on a PC or Mac that are designed to be very easy to use, even for computer novices; it is designed to speed up auditory processing, improve working memory, and encourage efficiency of neural networks involved in memory processing. The exercises adapt to individual level, and give constant feedback about progress.
RESULTS: Clinically significant improvements (and beyond expected practice effects) were observed following the 8-week Brain Fitness Program intervention in the areas of complex attention and working memory (multi-tasking), learning efficiency, verbal fluency and complex psychomotor efficiency. Substantial improvements were also noted by the participant in his cognitive processing and in his efficiency in day-to-day activities.
CONCLUSIONS: The Brain Fitness Program (BFP) may offer a potentially beneficial cognitive intervention tool for those experiencing cognitive impairments related to HIV/AIDS. Further case studies are underway in our neurobehavioural unit to explore the potential support for a larger intervention trial.

P311
LITERATURE REVIEW: EXAMINING THE IMPACT OF COMMUNITY-BASED INTERVENTIONS ON HIV/AIDS PREVENTION EFFORTS

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BACKGROUND: Since the HIV/AIDS epidemic began, community-based organizations (CBOs) have offered a valuable opportunity for prevention efforts that are flexible, timely, and creative in response to emerging and urgent needs. A growing body of peer-reviewed studies demonstrates the efficacy of HIV prevention interventions, but little attention has been afforded the role that CBOs play in these efforts. The objective of this literature review was to examine the impact of community-based prevention interventions in resource-rich countries including Canada on HIV/AIDS incidence rates, changes in risk behaviours, HIV-related knowledge and/or testing/sero-status determination.
METHODOLOGY: A systematic review of English-language, peer-reviewed articles published between 2000-2008 pertaining to community-based HIV prevention interventions in Canada, Australia, New Zealand, the UK and the US was undertaken. While the focus of this review was on

studies conducted specifically within CBO settings, a selection of randomized control trials was also included, provided they a) clearly demonstrated community-level research involvement, and/or b) integrated 'diffusion of innovation' theories and practices within the research. Twenty studies meeting the search requirements were identified and discussed, including HIV prevention interventions pertaining to outreach, workshops and trainings, peer education, prevention and awareness campaigns and secondary prevention.

RESULTS: The collective findings demonstrated that community-delivered HIV prevention interventions can and are successful in altering risky behaviours, in increasing testing rates and/or reducing the transmission of HIV. Collateral benefits to community-based prevention were also evident, including a) increases in individual self-efficacy, self-esteem and self-empowerment, b) increases in CBO partnerships and capacity-building, c) the creation of strong and supportive communities, and d) cost-effectiveness and cost-savings.

CONCLUSIONS: The findings suggest that CBOs offer a vital and vibrant contribution to Canadian HIV prevention efforts, and that prevention interventions are successful when delivered by and within 'community'. CBOS need increased opportunities for capacity-building in order to effectively document and evaluate these contributions.

P312
IS THERE AN ASSOCIATION BETWEEN FOOD SECURITY AND INJECTION-RELATED HIV RISK?

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Little is known about food security (i.e., having enough to eat) among injection drug users (IDUs) and if it correlates with injection risk behaviours.

Using a structured interview, we asked 145 IDUs in London, ON about injection practices, food/housing security, service use, HIV and hepatitis C (HCV) status and wellbeing. Bivariate statistics and logistic regression were used to assess the association between food security and re-use of needles, injection water, cookers and filters.

In the past 6 months, 52% reported that on a daily/weekly basis they did not have enough to eat because of a lack of money; 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 and 18% re-used a filter. 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).

Food insecurity is frequent among IDUs. 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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P313
ONE FOOT FORWARD: A GIPA TRAINING TOOLKIT

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INTRODUCTION: Key stakeholders have identified the need in producing a series of training modules to assist people living with HIV in building capacity to acquire leadership skills that will promote their involvement in communities across the country. This project aimed to address this need by creating a training toolkit to foster and enhance existing networks of informed and empowered individuals within the PLWHIV/AIDS community.

METHODS: A national working group consisting of PLWHIV/AIDS with proven expertise in organizing and conducting policy dialogue, negotiating, networking, program planning, and governance, in collaboration with educational and technical resource persons, developed the toolkit's basic structure by reviewing each module throughout its development and providing feedback on its quality and accessibility. Draft modules were tested with bilingual focus groups from a diversity of PLWHIV/AIDS i.e.; women, ethno-cultural, aboriginal, youth, MSM, newly diagnosed and long term survivors. Recommendations were used to rewrite and fine tune the modules.

RESULTS: "One Foot Forward : A GIPA Training Toolkit" designed by and for PLWHIV/AIDS a plain language, bilingual resource offering training in; the principle of greater involvement (GIPA), effective, knowledgeable leadership, identity, diversity and disclosure issues, community based AIDS organizations, boards and governance, leadership skills and working effectively in groups.

DISCUSSION: Effective greater and meaningful involvement for PLWHIV/AIDS requires strengthening the capacity of positive individuals to participate fully through training and skills-building by providing opportunities to grow in personal empowerment, communication and presentation skills, acquiring knowledge about the medical, legal and social aspects of HIV/AIDS. To effectively carry out the work of Boards and committees, positive individuals need skills in organizing and conducting policy dialogue, negotiating, networking, program planning, and governance. "One Foot Forward" meets the challenge of GIPA by helping PLWHIV/AIDS to identify personal values and philosophies, developing leadership skills and gaining community knowledge and awareness.

P314
THE TALES OF TWO CITES: UNDERSTANDING THE CHALLENGES OF LIVING WITH HIV AS A AFRICAN WOMAN

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I examined and compared how 10 African women living with HIV/AIDS in Canada and Ghana dealt with their daily psychosocial needs and challenges. Based on a life history methodology, responses of participants were coded and analyzed in relation to the ecological framework of psychology. The thematic analysis indicated that the women faced different challenges despite existing medical, governmental and community support. The women highlighted different forms of coping strategies and strengths that could be shared with professionals and other women living with HIV/AIDS. Findings have conceptual and methodological implications for future psychosocial research on women living with HIV/AIDS.

P315
SOCIAL SUPPORT HAS DIRECT AND INDIRECT EFFECTS ON HEALTH-RELATED QUALITY OF LIFE AMONG PEOPLE LIVING WITH HIV/AIDS IN ONTARIO: THE POSITIVE SPACES, HEALTHY PLACES STUDY

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BACKGROUND: Social support is an important determinant of health among people living with HIV although its relationship to health-related quality of life (HRQOL) and the factors which might mediate these relationships are less clear.

METHODS: A total of 605 people living with HIV in Ontario were recruited through community-based AIDS service organizations as part of the CIHR-funded Positive Spaces, Healthy Places Study. 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. Sample characteristics: average age = 43 years; 75% were male; 63% identified as Gay, Lesbian, or Bisexual; and 13% were Aboriginal. About half were diagnosed with an AIDS defining conditions and 48% were living alone. Nearly two-thirds were living in the Greater Toronto Area and 6% were living in unstable housing conditions.

RESULTS: Social support had a significant positive effect on Physical Health Summary (PHS) (β=0.23, p <0.01) and Mental Health Summary (MHS) (β = 0.39, p <0.01) scores for HRQOL while depression had a significant negative effect on both PHS (β=–0.32, p <0.01) and MHS (β=–0.76, p <0.01). After controlling for depression and other variables, social support had similar and significant direct effects on PHS (β=0.14) and MHS (β=0.14). The indirect effects of social support on MHS was greater than that of its direct effect indicating that social support had a larger indirect effect on MHS through depression.

CONCLUSION: Social support impacts HRQOL directly and indirectly. Using established community-based interventions to enhance social support with partners, family members, and friends, may reduce the negative effects of depression, which in turn, could improve health-related quality of life for people living with HIV.

P316
YOU'RE BREAKING MY HAART: HIV AND VIOLENCE AMONG A COHORT OF WOMEN ON TREATMENT IN BRITISH COLUMBIA, CANADA

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BACKGROUND: HIV infection in Canada is most prevalent among marginalized groups and the past decade has shown women are increasingly making up higher rates of infections. While associations between HIV and violence are well documented, the impact of current violence on treatment outcomes is not well understood. Our objective is to examine the rates and predictors of violence among women on highly active antiretroviral therapy (HAART).

METHODS: The Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort is a prospective study of HIV+ persons on HAART. Participants are ≥18 years of age and recruited from the Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS. Explanatory variables are collected through a comprehensive interviewer-administered interview. Clinical variables are obtained through linkages with the DTP. A bivariate analysis compared differences between women who ever experienced violence and those who hadn't. Another bivariate analysis was done among the women who had experienced violence, comparing those who reported recent violence (<6 months) with those who reported violence ever. A multivariable logistic regression model was used to examine predictors of experiencing recent violence.

RESULTS: Of 573 LISA participants, 151 (26%) are women with 125 (83%) reporting ever having experienced violence. Recent violence (<6 months) was reported by 31 (25%) women and 76 (61%) reported violence before the age of 16. Half of the women who have experienced violence reported more than 5 violent episodes. Mental illnesses (p=0.007) and perceived stigma (p=0.001) are more common in women who have ever experienced violence. Women with recent violence (<6 months) were more likely to be current illicit drug users (p=0.004) than those with ever violence. The multivariable model showed stable housing to be protective of recent violence (AOR 0.22, 95% CI: 0.08-0.59, p=0.003).

CONCLUSION: The women in this cohort are experiencing unprecedented levels of violence. Stable housing could make a critical difference in a woman's ability to escape violence, remain safe, and improve treatment outcomes.

P317
PHA ACCESS – A MODEL OF COLLABORATION TO INCREASE MENTAL HEALTH SERVICES IN AIDS SERVICES

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BACKGROUND: There is broad recognition of the need for intersectoral collaboration in addressing mental health issues for people living with HIV. The challenge is to develop models sensitive to the complexities of local strengths and needs within the context of systemic issues such as racism, able-ism, culture, language, heterosexism and institutional power imbalances. PHA ACCESS is a community-based research project that was created to test a model of community-hospital collaboration, knowledge exchange, and capacity building in order to increase access to mental health services for people living with HIV/AIDS.

OUR APPROACH TO RESEARCH AND OUR MODEL OF COLLABORATION: Our collaborative model of research and program refinement has been guided by the principles of community based research and efforts to facilitate knowledge exchange through three research questions that sought to examine: 1) the effectiveness of the collaboration; 2) the effectiveness of training and support processes designed to enable ASOs to provide three evidence-based services, specifically art, mindfulness and narrative psychotherapies; and 3) client outcomes. PHA ACCESS co-investigators (i.e., staff from seven ASOs, an HIV psychiatric clinic and community members) participated in focus groups and an electronic survey to reflect on the collaborative process and model. Trainees participated in in-depth interviews to assess the training effectiveness and to provide recommendations for adapting interventions and training. To assess client impact, process and outcome measures were administered via the internet to clients before, during and after the interventions; and they participated in in-depth interviews.

CHALLENGES AND EFFECTIVENESS OF OUR MODEL: This presentation will outline our model of collaboration, situate the model in relation to the literature, and offer findings about the challenges and effectiveness of our model. Our findings include insights about the power and flexibility of knowledge exchange for addressing the gap in community-level mental health services with respect to structural, community and cultural contexts while also enhancing community-hospital collaboration.

IMPLICATIONS OF OUR MODEL: The implications for our research include project expansion to additional sites and with additional populations.

P318
WOMEN LIVING WITH HIV/AIDS AND LIPODYSTROPHY: TRANSFORMED BODIES, DISRUPTED SELVES AND FRAGILE SOCIAL TRAJECTORIES

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Over the past decade, the lipodystrophy syndrome has become one of the biggest challenges in the field of HIV/AIDS. Yet, healthcare professionals have a very limited understanding of the experience of lipodystrophy since current knowledge is centered on the biophysical dimension of this syndrome. In fact, few qualitative studies have examined how lipodystrophy transforms the lives of people living with HIV/AIDS by reconfiguring their bodies in unexpected ways. The scarcity of research on this topic is particularly concerning for women living with HIV/AIDS who have not been given the opportunity to describe what it means to be a woman and to live in a transformed body in the face of the chronicity of HIV.

OBJECTIVE: The main objective of this qualitative study was to explore, describe and conceptualize the transformation process that women living with HIV/AIDS experience following the onset of lipodystrophy.

METHODS: From May to August 2008, 19 women were interviewed using semi-structured in-depth interviews. The data was then analyzed using a grounded theory approach and a theoretical perspective from the fields of critical theory and feminist theory.

RESULTS: During the analysis, five categories emerged from the data and were further developed into a number of sub-categories. Women explained how lipodystrophy had transformed their bodies, disrupted their identities and confined them to a fragile social trajectory. In this sense, the experience of lipodystrophy was described as a profoundly disruptive transformation that needed to be addressed accordingly by health care professionals.

RECOMMENDATIONS: Women identified four domains of intervention regarding the experience of lipodystrophy – the HIV clinic as a safe and open space for discussions; the community organization as a key site for education and support; the governmental agency as a political battleground for services and advocacy; and the pharmaceutical company as a platform for activism and ethical research.

P319
BENEATH THE MASK. EVALUATION OF A GROUP SUPPORT PROGRAM FOR CHILDREN/YOUTH AFFECTED BY HIV AND AIDS

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ISSUES: Little research has been done to assess the value of group therapy programs for children/youth affected by HIV and AIDS. The bulk of research on the psychosocial impact of HIV and AIDS has yet to move beyond a narrow focus on children who are themselves infected.
PROJECT: To address this gap in knowledge The Teresa Group has undertaken an evaluation of 8 years of data collected in its "Leading the Way" (LTW) program which provides group therapy to children/youth who are aware of their families HIV status and for those who are not disclosed to. This evaluation is a unique analysis of programming that seeks a holistic understanding of children affected by HIV and AIDS.
RESULTS: Analysis of the quantitative 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 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, including the loss of parents and caregivers and concern about what would happen to themselves and their siblings. 2. Fears of rejection related to HIV and AIDS. 3. Families experience stress as parents struggle to cope with living with HIV or AIDS. Families' structures and roles are changed due to the illness, separation and death of family members.
LESSONS LEARNED: 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.

P320
LE VIH/SIDA ET SES RÉPERCUSSIONS PSYCHOLOGIQUES DANS LES ROMANS CONTEMPORAINS

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OBJECTIFS : L'épidémie du VIH/sida a suscité de nombreuses œuvres littéraires, particulièrement sur l'expérience de la maladie et ses répercussions psychosociales. Dans la perspective de l'anthropologie romanesque qui utilise les textes littéraires comme source de données sur l'imaginaire associé à cette épidémie, cette communication vise à dégager les représentations du corps malade.
MÉTHODOLOGIE : Un corpus de romans américains, français et canadiens portant sur le VIH/sida, parus après 1995, a été établi et une analyse du contenu a été codifiée en tenant compte des dimensions rattachées aux représentations de la maladie, des antirétroviraux, de la sexualité et de la mort.
RÉSULTATS : Le corpus met en évidence la complexité de l'imaginaire liée aux retombées de la maladie et à l'intensité des émotions associées à l'infection chez les personnages principaux, devenant comme étrangers à eux-mêmes et aux autres. Les romans insistent sur la peur des répercussions de la maladie sur le corps, le sang et le sperme, la personne devenant à risque de contaminer son entourage (avec les mécanismes de distanciation sociale) et de la mort. D'autres affects (panique, honte, culpabilité, remords, sentiments de saleté, révolte, impuissance) sont aussi relevés, comme des troubles mentaux plus sévères (démence, dépression), mais aussi l'attente ou l'envie de la mort, parfois hâtée par le choix du suicide (un thème dominant). La dimension de l'espoir est peu traitée. Quant aux antirétroviraux, leurs usages secondaires peuvent contribuer à un sentiment de délabrement mental ou physique, source de découragement et de fatigue.
CONCLUSIONS : Le corpus romanesque ne présente pas une vision optimiste de la maladie liée aux progrès des traitements, privilégiant une perspective pathétique plutôt qu'un retour à une normalité. Ce décalage doit-il être attribué aux écarts entre les innovations biomédicales et leur traduction tardive dans les narrativités ou à des contraintes de l'écriture romanesque qui insistent sur le tragique ?

P321
GOOD EATS! COMMUNITY-BASED RESEARCH ON HIV/AIDS AND FOOD SECURITY IN VANCOUVER, BC

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OBJECTIVES: To document 1) the interrelated issues of the use of drugs, food security, and HIV/AIDS, 2) the everyday challenges of housing, food preparation and HIV treatment, and 3) how PWA obtain and handle food in a low resource setting.
METHODS: This community-based research was comprised of 1) a series of workshops with low-income individuals living with HIV/AIDS in the Downtown Eastside of Vancouver and 2) the creation of learning exchange tools, such as meal calendars and practical cookbooks. The target population for this study was low-income, HIV+ men and women who face multiple barriers to accessing food due to poverty, poor quality housing, drug abuse and physical or mental health issues.
Workshop participants engaged in a number of activities including facilitated group dialogues about their food consumption and mapping of food resources within the community. Results were analyzed and organized thematically in order to develop an understanding of the local food landscape based on the everyday experiences of participants.
RESULTS: Participants reported a number of barriers to accessing healthy food; these included poor quality meals available at charitable locations, lack of retail options within the neighbourhood and fear of using available programs for PWA because of stigmatization. In the post-workshop evaluation, participants reported uptake of simple and effective techniques for food purchasing, access and preparation.
CONCLUSION: This research suggests that there are significant gaps in ability for low-income, HIV+ individuals to access nutritious food in Vancouver, BC. Because nutrition is a vital, yet often overlooked, component to maintaining the health of PWA, it is critical that programs be developed to address this gap.

P322
STRESSORS AND WAYS OF COPING FOR WOMEN LIVING WITH HIV IN TORONTO AND HAMILTON

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PLAIN LANGUAGE SUMMARY: Excessive and sustained stress is physically and mentally unhealthy for people living with HIV. Stress can quicken the progression to AIDS and prompt unhealthy behaviour including decreased adherence to ARV medication. Given the social, political, historical and economic context in which HIV-positive women live, their exposure and vulnerability to stressful situations is particularly substantial and different from male counterparts. It is therefore important to understand the stressful experiences faced by HIV-positive women and the coping strategies they adopt.
OBJECTIVE: To qualitatively examine the most recent and challenging stressors identified by HIV-positive women living in Hamilton and Toronto and to determine coping strategies adopted in the context of stressors they are responding to.
METHODS: Six women living with HIV in Hamilton and Toronto enrolled in the wHEALTH Project were asked to describe their most recent and challenging stressful experience. Descriptions were analyzed using qualitative content analysis and NVivo software. The Ways of Coping Questionnaire was also completed and analyzed.
RESULTS: Child-related and housing problems were two key themes that emerged from the stressor narratives. Child-related problems included conflict with child; desire to have a child and maternal disclosure of HIV status. Housing related problems involved mould and excessive noise. Four sub themes were identified including partner-related problems, culturally appropriate services related to children, illness of other and of self. Each participant used a variety of coping strategies to address their stressor; the most common strategy being seeking social support.

CONCLUSIONS: Women living with HIV in Toronto and Hamilton described child-related problems and housing issues as their most recent and challenging stressful experiences. Although a variety of coping strategies were used, seeking social support was predominant. These findings support the need for more targeted programs to help mothers (and women of childbearing age) living with HIV as well as the promotion of support-related services (i.e. case management and support groups) provided by community organizations in order to alleviate stressors faced by these women.

P323
IMPACT OF HIV STIGMA ON HEALTH OUTCOMES AMONG PEOPLE BORN ABROAD LIVING WITH HIV

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In 2006, there were over 6 million Canadian immigrants, representing nearly one-fifth of the national population. Immigrants make up approximately two-thirds of Canada's annual population growth, and by 2020 immigration will be an even larger source of national growth. The concern for the mental health of Canadian immigrants with HIV is growing due to the increasing rates of infection worldwide and the escalating prevalence of immigrants living with HIV.

OBJECTIVE: Identify the impact of HIV stigma and nativity on depression as a health outcome, and the effective resources that may mediate/moderate the negative influence of being born abroad on well-being.

METHODS: The OHTN Cohort Study is a prospective study investigating the clinical and social-psychological factors of people living with HIV recruited from HIV specialty and primary care clinics throughout Ontario. The current sample consists of 630 adults with HIV, 256 of which were born abroad (41%). We examined multivariate regression models to assess direct, indirect, and interaction effects of HIV stigma and nativity upon depressive symptoms.

RESULTS: Individuals born abroad reported significantly greater depressive symptoms (beta=–1.42, $p < .05$), even after controlling for the impact of HIV stigma (beta=.23, $p < .001$). Significant indirect effects of being born abroad on depressive symptoms were found through one's sense of mastery ($\beta = .064$, $p < .001$), and through the amount of social support received ($\beta = .019$, $p < .05$). In addition, one's sense of mastery moderated the direct impact of nativity upon depressive symptoms (beta=.313, $p < .05$). The influence of mastery to reduce depressive symptoms was greater for the participants born abroad in our sample, then those born in Canada.

CONCLUSIONS: To improve the health outcomes of immigrants with HIV, it may be beneficial for service providers to be aware of the negative impact of being born abroad on psychological well-being in addition to HIV stigma. Heightening sense of mastery to reduce depressive symptoms may be particularly beneficial for immigrants living with HIV.

P324
"SHACKLED WITH HIV:" HIV-POSITIVE WOMEN'S EXPERIENCES OF GENDER-BASED INTIMATE PARTNER VIOLENCE

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Women as a subgroup are among the fastest growing population acquiring HIV in Canada, and HIV-positive women appear to experience gender-based intimate partner violence (IPV) more frequently and severely than their HIV-negative counterparts. Although HIV/AIDS and IPV have been linked, there is a lack of programs and policies that integrate these epidemics and are adapted to women's needs. This qualitative research study in Vancouver, Canada, details women's perceptions of the relationship between HIV and IPV and their experiences of seeking support from AIDS service organizations when dealing with IPV. In-depth interviews were conducted with 6 HIV-positive women who are survivors of IPV. Data emerged into two themes: HIV is a breeding ground for abuse and blame for HIV infection manifests in abuse. In addition to the themes, women talked about how agency support is meaningful when workers "stick" beside women, and how workers with experiential knowledge ensure empathy and understanding. Analysis highlights that HIV/AIDS initiatives should incorporate strategies for stopping IPV and supporting women who experience IPV through utilizing peer support. Also, collaboration needs to occur between HIV-positive women and social workers to devise education and training on the links between HIV/AIDS and IPV and "best practices" for social workers.

P325
FACTORS INFLUENCING POSITIVE BODY IMAGE AMONG HAART-RECIPIENTS IN BRITISH COLUMBIA

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BACKGROUND: With significant reductions in AIDS-related morbidity and mortality, HIV is increasingly viewed as a chronic condition. However, people on HAART are experiencing new challenges such as metabolic and morphological body changes, which may affect self-perceived body image. The concept of body image is complex and encompasses an individual's perception of their existential self, physical self and the social interpretation of their body by others.

METHODS: The LISA cohort is a prospective study of HIV+ persons on HAART. An interview-administered survey collects information regarding body image, stigma, depression (CES-D 10), food insecurity, and quality of life among other information. In univariate analysis, chi-squared tests and the Wilcoxon rank sum test were used to compare individuals reporting positive body image with those reporting negative body image. In multivariate analysis, logistic regression was used with odds ratio being the measure of the association between positive body image and the covariates.

RESULTS: Of 472 LISA participants, 57% reported positive body image. The adjusted multivariate analysis showed that being male (AOR= 2.09), employed (AOR=2.44), and having a suppressed viral load (AOR=1.84) are associated with positive body image. Alternately, stigma (AOR=0.37) and depression (AOR=0.27) are associated with negative body image. The estimated probability of a person having positive body image without stigma or depression is 80%. When stigma is included alone, probability drops to 66%, and when depression is included alone probability drops to 53%. Depression and stigma combined result in a probability of 37%.

CONCLUSIONS: Further efforts are needed to address body image issues among people living with HIV. In order to lessen the impacts of depression on body image, such issues must be addressed in healthcare settings. Community interventions are also needed to address stigma and reduce negative body image in an effort to improve the lives of people living with HIV.

P326
EVALUATION OF THE PROVINCIAL TRAINING OF « POUVOIR PARTAGER/ POUVOIRS PARTAGÉS », A PROGRAM FOR WOMEN LIVING WITH HIV, ON THE HEAVY ISSUE OF DISCLOSURE

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OBJECTIVE: Describe the effects of the training on the participant's appropriation of « Pouvoir partager/ Pouvoirs partagés » (PP/PP), a program for women living with HIV to help them face any situation related to the disclosure of their serologic status.

METHODOLOGY: In October 2008, 19 intervention workers and 7 women living with HIV, from different community organizations of the Quebec province (n=17) have participated to an intensive two days training which objectives were to review the issues on disclosure and habilitate them to facilitate and implement the program in their respective regions. This training gave them the opportunity to try out some of the program's activities and develop some strategies to reach women living with HIV and implement PP/PP. They completed a questionnaire before (n=26) the training and two weeks after (n=19) to measure the changes in their knowledge (15 items), their attitude toward disclosure (2 items), their self-efficacy level toward the program implementation (11 items) and toward facilitating the program (14 items). Participants satisfaction was also assessed (13 items). Some non parametric analyses have been realized to evaluate the effects of the training.

RESULTS: After the training, the participants were highly satisfied (M1=6.07). The training seems to have increased their knowledge about

disclosure (M=71.2% vs 81.4%; p=0.004) as well as their self-efficacy level toward the program's implementation (M1=5.36 vs 5.71;p=0.05) and toward facilitating the program (M1= 5.37 vs 6.07;p=0.002). (1=Scale varying from (1) very low to (7) very high).
CONCLUSION: This training is the beginning of the women's appropriation of the program they are going to implement across the province of Quebec to support their colleagues living with HIV. To consolidate and reinforce this appropriation, other training, support and follow-up strategies are necessary.

P327
MASTERY AND SOCIAL SUPPORT BUFFER THE EFFECT OF HIV-RELATED STIGMA ON DEPRESSION: THE OHTN COHORT STUDY

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OBJECTIVES: (1) to determine the effect of HIV-related stigma on depression; and (2) to determine whether mastery and social support (internal and external psychosocial resources, respectively) buffer the effects of stigma on depression.
METHODS: 589 people with HIV provided baseline data in the context of the ongoing OHTN Cohort Study, an observational study examining the sociobehavioral and clinical determinants of health among PHAs. Data was collected on demographic status (age, gender, sexual orientation, marital status, ethnicity, country of birth, education, employment status, income, drug and alcohol use), HIV disease markers (CD4 cell count, viral load, AIDS-defining conditions, time since diagnosis), psychosocial factors (symptom distress, social support, mastery, stigma) and depression. We performed regression analyses to determine the effect of stigma on depression. We controlled for potential confounders and created interaction terms to examine whether mastery and social support acted as moderators in the relationship between stigma and depression.
RESULTS: The first model showed that stigma had an independent effect on depression after controlling for potential confounders ($\beta = 0.13$, $p < 0.001$). Mastery ($\beta = -0.38$, $p < 0.001$) and social support ($\beta = -0.23$, $p < 0.001$) also had significant independent effects on depression, but were associated with lower, rather than higher depression scores. When an interaction term between mastery and stigma was included in the model, mastery was found to buffer the effect of stigma on depression ($\beta = -0.11$, $p < 0.001$). In a separate model, social support was also found to buffer the effect of stigma on depression ($\beta = -0.08$, $p < 0.001$) . As the level of mastery or social support increases, the strength of the association between stigma and depression decreases.
CONCLUSIONS: HIV-related stigma is significantly related to experiencing higher levels of depression among PHAs. This effect was buffered by the presence of mastery and social support. These findings support the idea that personal and external psychosocial resources can be drawn upon to ameliorate the effects of stigma on depression.

P328
HIGH RATE OF SELF-PERCEIVED HIV-RELATED STIGMA AMONG A COHORT OF INDIVIDUALS ACCESSING HIGHLY ACTIVE ANTIRETROVIRAL THERAPY IN BRITISH COLUMBIA

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BACKGROUND: Research indicates that self-perceived stigma is an inhibitor to adhering to prescribed antiretroviral therapy and contributes to nondisclosure of HIV-positive status. Consequently, stigma affects prevention and treatment efforts as well as significantly impacting a person's psychological well-being. We examine the prevalence and factors associated with self-perceived HIV-related stigma among a cohort of individuals receiving HAART in British Columbia.
METHODS: Data are drawn from the Longitudinal Investigation into Supportive and Ancillary Health Services (LISA) study. LISA participants completed an interviewer-administered survey, which included questions on socio-demographics, stigma, depression, quality of life, and perception of standard of living. Clinical variables, which included CD4 count, viral load, and adherence, were obtained through the British Columbia HIV/AIDS Drug Treatment Program. Categorical variables were compared using Fisher's Exact Test and continuous variables were assessed using the Wilcoxon Rank-Sum Test. Multivariable logistic regression was performed to determine the independent predictors of self-perceived HIV-related stigma.
RESULTS: Forty-six percent of participants self-perceive HIV-related stigma. In the adjusted multivariate analysis depression was associated with perceiving stigma (adjusted odds ratio [AOR] 2.04, 95% CI 1.22-3.41), along with four quality of life variables: health worries, financial worries, disclosure worries and sexual function (AOR 0.72, 95% CI 0.64-0.82; AOR 0.89, 95% CI 0.80-0.99; AOR 0.61, 95% CI 0.53-0.70; and AOR 0.87, 95% CI 0.77-0.99). Participants who reported lower standards of living compared to neighbours were more likely to perceive stigma (AOR 0.40 95% CI 0.2.-0.80).
CONCLUSION: Further efforts are needed to support the mental and emotional well-being of those who access treatment. Our study identifies depression, poor quality of life and poor standard of living as independent variables associated with perceiving HIV-related stigma. These factors must be addressed when implementing effective and sustainable programs designed to reduce stigma and improve the lives of people living with HIV/AIDS.

P329
AN EXAMINATION OF HOUSING AND ITS EFFECTS ON NEIGHBOURHOOD PERCEPTION AND CLINICAL OUTCOMES IN A COHORT OF HAART RECIPIENTS IN BRITISH COLUMBIA

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BACKGROUND: HIV prevalence in Canada has increased among vulnerable groups. Lack of stable housing and food insecurity are major issues affecting marginalized neighborhoods and there is growing evidence that both may compromise treatment delivery and lead to poor clinical outcomes for people on HAART. To identify factors that may be important for treatment success, we examined the impact of stable housing, food security and related variables on perceptions of neighborhood among HAART recipients in British Columbia.
METHODS: The Longitudinal Investigation into Supportive and Ancillary health services (LISA) project is a prospective cohort of the BC Centre for Excellence in HIV/AIDS' Drug Treatment Program. Demographic information was collected by interviewer-administered surveys. The primary outcome measure was neighborhood perception, which was evaluated using previously defined scales. Three components were considered: perceptions of neighborhood problems, neighborhood cohesion and relative standard of living within the neighborhood. Multivariate linear regression and proportional odds logistic regression with a confounder model selection process was done using stable housing and food security as variables of interest.
RESULTS: 370 LISA participants were included in this analysis. Being food secure increased a person's perception of neighbourhood quality and cohesion by 5% over those who were not food secure. People who had stable housing had a 12% increase in their perception of neighbourhood quality and a 5% increase in their perception of neighbourhood cohesion over those who did not have stable housing. Men had a higher perceived neighbourhood quality and cohesion than females. Current use of illicit drugs and depression were found to influence perceived neighbourhood quality but not cohesion.
CONCLUSIONS: Food and household security were both significantly associated with perception of neighbourhood quality and cohesion. Our results indicate that in BC interventions focused on food security and stable housing could help optimize HIV treatment. Currently, there is a need to further investigate the impact of neighbourhood on the health of people living with HIV/AIDS.

P330
PSYCHOSOCIAL PROFILE OF MEN LIVING WITH HIV (PLHIV) WHO WERE ALSO INJECTION DRUG USERS (IDU)

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OBJECTIVE: In a sample of PLHIV, describe the psychosocial characteristics that differentiate men IDU from other subgroups: heterosexual men non-IDU, men who have sex with men (MSM) non-IDU and women.
METHODOLOGY: Data come from the MAYA project, a longitudinal study on quality of life of PLHIV. A total of 904 participants were recruited between 2004 and 2007 through 11 medical clinics and HIV community organizations in Montreal. Of these participants, 124 (13.7%) were men IDU including heterosexual and MSM. Oneway ANOVA analysis was used to differentiate the 4 subgroups.
RESULTS: Compared to the other three subgroups, men IDU had significantly lower scores on the quality of life, anxiety and depression and family and friends social integration scales. They seem to have a less diversified social network. They also more frequently use alcohol and drug use as a coping strategy. The reality of men IDU is similar to the reality of heterosexual men non-IDU on two aspects: their scores on the social integration scale concerning their partner and on the orientation to life scale (meaningfullness factor) were lower than the scores of MSM non-IDU and women. These differences are all significant at $p < 0.0001$.
CONCLUSION: The specificities of the needs of men living with HIV who use injection drugs must be addressed. Beyond clinical follow-up, systematic interventions aimed at the improvement of mental health and the diversification of coping strategies should be offered to men IDU living with HIV when they access to the medical system and community organizations. All strategies promoting social integration should also be reinforced.

P331
AGING WITH HIV/AIDS: A QUALITATIVE STUDY OF THE EXPERIENCE OF PEOPLE 50 YEARS AND OVER LIVING IN QUEBEC

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HIV infection is affecting a growing number of people aged 50 and over due to the combined effect of greater life expectancy of those infected and an increase of newly diagnosed people in this age group. Although in the United States some studies have looked at the social issues experienced by people living with HIV 50 years and over (PLHIV50+), the situation in Canada is largely unknown. Our research aims to fill that gap by documenting the experiences of several PLHIV50+ living in Quebec. Specifically, it examines how the aging process, or being elderly, influences how one lives with HIV. Following a qualitative methodology, individual semi-structured interviews were conducted with nine PLHIV (five men and four women) aged 50 to 68. The preliminary results show that because of the double vulnerability associated with being elderly and having HIV, the respondents encounter numerous difficulties on a personal and social level. The study revealed their personal issues, such the experience of deteriorating physical abilities that cause a discrepancy between their real age and how old they feel, difficulties in knowing whether their symptoms are due to HIV or aging, decreased sexual activity, fear of discrimination from other older people, and feelings of loneliness. On a social level, the participants reported financial difficulties, premature ending of employment, the need for home care, and worries about issues related to institutionalization when they will lose their autonomy. These preliminary findings demonstrate that PLHIV50+ encounter very specific difficulties that are important to document so that interventions and programs adapted this double-sided issue can be put into place.

Social Sciences – Social Structural and Population-level Risks and Interventions to Prevent HIV

P332
CHARACTERISTICS OF FEMALE STREET SEX WORKERS USING DRUG INJECTION IN QUEBEC CITY

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BACKGROUND: Everyday life conditions of female street sex workers using drug injection are particularly difficult. Peer intervention can constitute a good way to improve their situation in a long-term process and to prevent HIV transmission. Twenty women of Quebec City signify their willingness to take part in this process proposing a community-based research framework.
OBJECTIVES: To present women's characteristics, their life and health conditions, the nature of self-help provided to each other and the reality of street sex work in Quebec City.
METHODS: In the first phase of the project (December 07- January 08), individual semi-structured interviews were conducted with 20 women practicing street sex work and using drug injection. Nineteen interviews were integrally transcripted and analysed with Nvivo software.
RESULTS: Women interviewed are 19 to 52 years old, with low level education and a history of incarceration in many cases. Half of them inject both opiate and cocaine. Women report frequent hospitalizations for health problems. Two third are infected by hepatitis C and a third by HIV. Other infections related to injection are common: abscess, phlebitis, endocarditis and cellulitis. They also present mental health problems and a deficient nutrition. By the time of the interview, women had a place to stay but for most of them it was a temporary arrangement. The self-help they provide to each other concerns material, technical, financial and emotional support. Advantages related to street sex work that women named are the possibility of gaining money very quickly and the autonomy that it provides. However, a lot of disadvantages are pointed out like being victim of physical and psychological violence from clients, other street sex workers and police officers. The risk of contracting infections or to be arrested is also present. Finally, those women live in precarious conditions, are isolated and would like to receive and give more support from/to their peer living the same reality.
CONCLUSION: Knowing women's characteristics enable collective workshops that sought the use of their strengths and underline their needs.

P333
NEEDS ASSESSMENT OF FEMALE STREET SEX WORKERS USING DRUG INJECTION IN QUEBEC CITY

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BACKGROUND: People injecting drugs are particularly vulnerable to HIV as it is for people who practice street sex work. Women presenting these two characteristics are obviously at higher risk. The "LUNE" project is a community-based research resulting from a partnership between the needle exchange program of Quebec City, Laval University and UQAR researchers and women who are street sex workers and injection drug users (SSW/IDU). It sought to prevent the acquisition/transmission of HIV by an intervention based on empowerment.
OBJECTIVES: To improve knowledge about collective needs of women who are SSW/IDU, in the global context of acquisition/transmission of HIV.
METHODS: Nineteen individual semi-structured preliminary interviews were done with women who are SSW/IDU. The interviews gave information about their collective needs. In a "sharing knowledge" perspective, a work group composes of six of those women, a field worker and a researcher met weekly from September to November 2008. The method proposed to deepen their needs and target collective objectives, consist in identifying the nature of the problems, the causes, consequences, actual solutions and

those that should be developed in terms of feasibility. A priorisation exercise was then complete.
RESULTS: The work group prioritized seven needs and elaborated collective objectives. The most important need identified and missing in the community is a safe place to rest shortly follows by rapid access to healthy food. In third and fourth positions, women mentioned physical protection against street violence and access to appropriate personal hygiene facilities. They would like more accessible (low-threshold) medical services as they present poor health condition. Protection against STI is also a preoccupation. Finally, social activities with women sharing the same reality could create solidarity among them.
CONCLUSION: Needs assessment of women who are SSW/IDU enable them to recognize their requirements, to prioritize them and give them life objectives. Identified needs can be address in an intervention developed with women in order to protect them against HIV.

P334
"BRING ME HOME": THE CANADIAN AIDS SOCIETY'S POSITION ON HOUSING AND HIV/AIDS

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ISSUES: Housing is recognized as a human right. Lack of adequate housing is linked to increased HIV risk through needle sharing and unprotected sex. For people living with HIV/AIDS, lack of adequate housing is associated with increased hospitalization, risk behaviours and mortality, and decreased access and adherence to treatment. Housing contributes to a sense of belonging, personal safety, social networks, and better health. In Canada, 13.5% of urban household were in core housing need in 2005. In Ontario, almost half of people living with HIV/AIDS had problems with housing.
DESCRIPTION: The current state of housing and its links to HIV/AIDS were assessed through a literature review, discussions with community, and an environmental scan of housing programs and initiatives in Canada. A background document provides the results of the review. Using research results to inform public policy, the Canadian AIDS Society (CAS) adopted a position on housing and HIV/AIDS, with recommendations for changes to public policies that have an impact on the response to HIV/AIDS.
LESSONS LEARNED: The literature review supported the issues identified above. Canada does not have a national housing strategy. Funding for housing initiatives falls short of the identified housing needs. Currently, 58.5% of CAS' member organizations provide housing or housing support. More resources are needed for community-based initiatives. Lack of adequate housing is a barrier to HIV prevention, treatment and care.
RECOMMENDATIONS: The federal government must develop a national housing strategy, with provincial, territorial and municipal governments, community-based organizations, people living with or at risk of HIV, people living in inadequate or unstable housing, homeless people, and the private sector. Governments need to invest in affordable housing, including home ownership, rental units, rent supplements, supportive housing, renovations, and emergency relief. More detailed recommendations are included in the position statement.

P335
THE CSSP'S COMMUNITY THEATRE PROJECT: RAISING AWARENESS AND CRITICAL DIALOGUE ON SOCIO-ECONOMIC VULNERABILITY AND POWER IMBALANCES WITHIN PERSONAL RELATIONSHIPS IN THE CONTEXT OF HIV/AIDS

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The Community Theatre Group employs a popular education technique which demonstrates the challenges of condom negotiation within common sexual situations. Issues of personal vulnerability and power imbalanced are highlighted through play situations in which economic, physical, social, political and emotional factors determine agency in personal relationships and sexual outcomes. The play works to objectify and deconstruct such situations and empower audience members to make informed and conscious decisions for dealing with HIV risk. A facilitator works to create critical dialogue on potential actions and outcomes surrounding the social situations that are familiar to the community.
Actors are active as Peer Educators, presenting the play to audiences at Bars, Community Centres, Community Health Centres, Schools, Libraries and Clinics. At the end of the play, the facilitator asks for audience input in how the situations could have been handled differently, while involving the audience in critically analyzing the relationships and outcomes illustrated. This process generates important public debate on issues such as Stigma, Condom Use, People Living with HIV, Immigration, Discrimination as well as key medical information about HIV transmission and infection. This project empowers the audience to analyze and act, strengthening a process of personal reflection, as well as independent decision-making skills.
The process of Community Theatre Project allows the community an opportunity to raise awareness and dialogue on taboo issues in a context that is depersonalized, non-judgemental and non-discriminatory. The Community Theatre Project works as a very powerful tool to change consciousnesses, risky sexual practices and sexual preconceptions about HIV prevention and personal vulnerability, by analyzing the social, economic and cultural factors which deeply impact decision-making on sexual activity.

P336
SPOT HIV TESTING PROJECT WANTS TO TURN ON MSM USING COMPLEX OUTREACH MESSAGES

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CONTEXT: SPOT, a research implementing rapid HIV testing in MSM Montreal community, is building its intervention and communication plan in and with community. It wants to increase testing access for MSM in Montreal using rapid testing in community settings.
OBJECTIVES: To clarify required outreach communication innovations according to focus group consultations.
METHODS: Focus Groups (2 groups, 16 men + 5 observers) with MSM and key-informants and feedbacks with community observers about testing barriers and testing interests.
RESULTS: Despite being tired of being told to use condoms and to get protection, MSM seem to know about AIDS and HIV, to be sensitive to recent testing campaigns and to want to access HIV tests. In this way, SPOT is proactive towards infection and is eager to find much more early recently infected men and high risk MSM.
Focus groups provided many applied communication examples with clear statements: respect MSM's preoccupations, interests, sexual behaviours, sub-cultures and personal involvement in community; fluid MSM identities adapt to contexts; etc. Based on these statements and according to focus group consultations and literature, we recognize that evolving *circumstances* and identities make prevention language vary (e.g.: newly arrived, casual next door guy, bears, leather, queer, older guys recognize themselves differently) as well as *situations* attract or distance guys from testing, e.g.: falling in love, being in a leisure sex period, being young and never tested, etc. Crossing circumstances with situations, we built a matrix of "characters" and established the relative outreach priority of each cell.
CONCLUSIONS: Matrix supports production control of relevant messages. Based on matrix priorities, we expect to create a variety of messages addressing different complexities of the environment and to identify which strata of the populations are still to be outreached regarding each typical situations crossed with circumstances (as is constructed the matrix). The matrix is therefore a working tool hypothesis for outreach program calling high risk MSM of Montreal to be "turned on" by getting tested and to better prevent HIV infection in the community.

P337
ENGAGING AFRICAN COMMUNITIES IN A COMMUNITY RESPONSE TO HIV/AIDS IN CALGARY: INSIGHTS FROM SERVICE PROVIDERS

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STUDY OBJECTIVE: To effectively engage affected communities in consultations in order to assess and meet community needs with respect to HIV prevention, care, and support.
METHODS: A community-based research approach using qualitative

methods is being utilized for this study, including (Phase 1) individual interviews with African community leaders in Calgary, and (Phase 2) focus groups and phone interviews with health and immigrant service providers in southern Alberta and selected national HIV/AIDS service providers. An Advisory Committee consisting of representatives from the African ethnocultural associations based in Calgary is guiding all aspects of the study. The focus groups include service providers from numerous community based organizations.

RESULTS: In Phase 2, transcripts from three focus group interviews (N=24) were analyzed. Themes were consistent across sub-groups of participants. Two sets of themes emerged in relation to major challenges associated with the provision of HIV prevention and treatment services to Calgary's African newcomer communities and recommendations for improving the provision of HIV/AIDS services to members of this community.

The issues identified included language barriers, lack of knowledge about HIV/AIDS services available, discomfort sharing with others if they are living with HIV/AIDS, lack of a support system in Calgary, lack of education about HIV/AIDS, stigma, denial, and how living with HIV/AIDS impacts individuals.

With respect to service delivery, the participants noted the lack of specific services for African immigrants/refugees and the need to educate African communities by providing more information on HIV/AIDS services.

In order to engage African communities, focus group participants identified the need for dialogue with communities about HIV/AIDS and the utilization of creative marketing strategies (posters/brochures) to promote awareness.

CONCLUSION: Program design related to health services and HIV/AIDS in African communities must include communities in planning and implementation and must actively address awareness levels and barriers to service access.

P338
EXPLORING TRANSITIONS IN DRUG USE AMONG AT-RISK YOUTH IN VANCOUVER, BRITISH COLUMBIA

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BACKGROUND: There is growing interest in ecological approaches to understanding HIV risk, and in describing the broader 'risk trajectories' of young people entrenched in drug-using contexts. This study sought to examine young people's understandings of transitions in their drug use and the social-structural factors that shape such transitions in the context of a local drug scene in Vancouver, Canada.

METHODS: Semi-structured qualitative interviews were conducted with 39 individuals recruited from a cohort of young drug users known as the At-Risk Youth Study (ARYS). Audio-recorded interviews elicited youth perspectives on how their drug use evolved in the context of the local drug scene. Interviews were transcribed verbatim and a thematic analysis was conducted.

RESULTS: Participants attributed transitions in drug use to a number of key factors, including: evolving feelings of curiosity; relationships with various social actors operating within the local drug scene; and engagement in polydrug use in order to remedy "comedown" effects – a practice that is shaped by the cultural logic of youth drug use within the local scene.

CONCLUSIONS: Consistent with previous research, our results indicate that although most participants emphasized personal autonomy as an explanation for transitions in drug use, their narratives underscore the importance of social-structural factors in shaping these transitions. Importantly, we found that youth do not define all addictions as equally problematic, as crystal methamphetamine addiction was viewed to be less problematic than crack cocaine or heroin dependency in our setting. These findings indicate the need for novel interventions that seek to address the individual, social and structural factors that promote transitions to more harmful forms of drug use and increase the risk of HIV infection among young people entrenched in the local drug scene.

P339
CLINICAL ENCOUNTERS: TORONTO YOUTH EXPERIENCES WITH SEXUAL HEALTH CLINICS

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INTRODUCTION: There is a global push towards better integrating HIV prevention with sexual health issues. Many youth are not accessing sexual health services that they need and want. Early teen access to services and relevant information (prior to initiating sex) has been shown to prevent unwanted pregnancies and sexually transmitted infections (STIs), including HIV.

METHODS: The Toronto Teen Survey (TTS) used a community based research approach to survey 1,216 youth through 90 workshops conducted by our trained youth advisory board. Youth were asked if they were going to services for sexual health reasons, what kinds of services they accessed, to rate their experiences and what might promote or discourage access.

RESULTS: 83% reported that they have never visited a sexual health clinic for any reason. Youth who are sexually active, girls, older, white or LGBTQ were more likely to access clinics for sexual health. Young women who have attended clinics are most likely to go for birth control, pap smears and pregnancy tests. Young men who have attended clinics are most likely to access free condoms, information about safer sex and HIV or STI testing. Generally, young women rated their experiences accessing sexual health services more favorably than young men or transgendered teens. Youth of all genders did not feel that clinics were particularly positive towards youth. The most important things that young women want to see in a sexual health clinic is that it is confidential/private, that it be a space where they are comfortable asking questions and that it is non-judgmental. For young men, the most important factors were that a clinic provides good information, that the location was close by or easy to get to and that they feel comfortable asking questions.

CONCLUSIONS: Despite the importance of sexual health care, few teenagers use the services available to them. Gendered interventions are needed to improve teen clinic access.

P340
OPERATION HAIRSPRAY 2 – SPRAY THE WORD ABOUT HEALTH – A COMMUNITY PARTNERSHIP BETWEEN SOMERSET WEST COMMUNITY HEALTH CENTRE AND OTTAWA PUBLIC HEALTH, TO CONTINUE HIV/AIDS EDUCATION WITH AFRICAN AND CARIBBEAN COMMUNITIES IN OTTAWA, CANADA

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OBJECTIVES:

This phase of the project has 4 key objectives;

1. To expand Ottawa Public Health's innovative peer led education model, beyond salons and barber shops to enable the health promotion messages to reach a larger target audience.
2. To evaluate the impact that stigma and discrimination have on community development approaches to the delivery of prevention strategies.
3. Identify strategies that reach more men within the African and Caribbean communities.
4. Evaluate the impact of the prevention approach on the community members receiving the health promotion information.

METHODS: The project seeks to increase community capacity, increase access/reduce barriers to health information on STI's and HIV/AIDS prevention, identify and document strategies to engage and reach African and Caribbean men in HIV/AIDS prevention and evaluate the impact of the prevention approach of peer volunteers by asking community members who receive the information for feedback via a confidential survey.

Data collection tools include: Confidential client impact survey, Training evaluation forms, Conversation recording forms with specific questions related to discussions on stigma and discrimination etc

RESULTS: At this halfway stage, 7 peer volunteers have been recruited and trained and the confidential client impact survey is in the process of being administered. Community feedback and suggestions on the project's

objectives are continuously documented. More complete results of the project will be available by April 2009.
CONCLUSION: Some of the successes and challenges of this phase of the project will be presented as well as findings from the client impact survey.

P341
HIV RISK, HISTORICAL TRAUMA AND SYSTEMIC INEQUITIES AMONG ABORIGINAL WOMEN IN CANADA

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PURPOSE: Based on the findings of a national meta-synthesis project focused on qualitative research in relation to women and HIV prevention, this paper explores how historical trauma and systemic inequities may influence HIV risk among Aboriginal women in Canada.
METHODOLOGY: This meta-ethnographic synthesis was focused on qualitative studies and papers, both academic and community-based, related to HIV prevention among both Aboriginal and non-Aboriginal women in Canada from1996 through 2008. All qualitative research articles meeting the specific search criteria published between these years were examined. As part of the meta-synthesis, a national team of researchers identified, assessed, and interpreted these Canadian studies with the aim of informing knowledge translation outputs relevant to community stakeholders, academics, and policy makers engaged in HIV prevention, care and treatment in Canada.
RESULTS/LESSONS LEARNED: Results of this meta-synthesis indicate that cultural disruption, residential schooling, family and cultural breakdown, and multigenerational abuse may influence HIV risk among Aboriginal women in Canada. As a means of addressing these issues in future prevention and education strategies, socioeconomic and systemic factors that place Aboriginal women at increased risk for HIV infection must be addressed in a culturally meaningful way. In addition, the implications of intergenerational social trauma must be considered by service providers during the development of the next wave of HIV prevention and education programs and services in Canada. Further consideration must also be given to the influences of colonialism, racism and residential schools on HIV risk prevention. Health care professionals and policy analysts must broaden their efforts in the area of HIV prevention among Aboriginal women to ensure that these social, economic, and political determinants of health are adequately and appropriately considered.

P342
WITHDRAWN

P343
"WE WRAP IT RIGHT": AN EVALUATION OF AN HIV PREVENTION CAMPAIGN TARGETING SOUTH ASIANS IN TORONTO

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INTRODUCTION: In order to be most effective, HIV prevention programs should be tailored to specific target audiences, hence the importance of culturally-tailored campaigns in an increasing diverse population. The Alliance for South Asian AIDS Prevention (ASAAP), a Toronto-based ASO developed the "Wrap It Right" public service announcement (PSA) encouraging condom use among South Asians. The current study sought to evaluate student satisfaction with the campaign, along with perceived parental satisfaction. We also wanted to determine whether demographic, socio-cultural, and sexual history variables impacted satisfaction.
METHODS: 106 heterosexual undergraduate students (78.6% female) viewed the PSA. Participants rated 4 statements on a 5-point scale (5 indicating more positive attitudes) measuring 1) how well they understood the video, 2) whether they "liked" it, 3) whether they thought the message was important, and 4) whether it was "offensive". Participants were also asked to rate these items based on how they thought their parents would respond. Composite "overall satisfaction" scores were calculated for both self and parent ratings.
RESULTS: In the total sample, participants' overall satisfaction with the PSA was high ($M = 4.27$, $SD = 0.65$). There were no significant differences in satisfaction by gender, age, immigration status, religion, or acculturation. Also, there were no differences in satisfaction between those who have had sex and those who have not. However, participant satisfaction was significantly more positive than perceived parent satisfaction ($M = 3.17$, $SD = 1.01$), $t(105) = 11.20$, $p < .001$.
DISCUSSION: Given that ASAAP's campaign was well-received by students, culturally targeted HIV prevention campaigns should continue to be developed and evaluated. As students perceived that their parents would feel less satisfied with the PSA, future evaluation studies should be conducted with older adults. In the current sample demographic and socio-cultural variables and sexual history did not significantly impact overall satisfaction, suggesting the PSA's universal appeal.

P344
THE TORONTO TEEN SURVEY: WHAT YOUTH WANT TO LEARN ABOUT SEXUAL HEALTH

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INTRODUCTION: Research shows that Canadian youth lack comprehensive information of risk factors associated with unprotected sexual activity and the knowledge required for their sexual health protection. At the same time, youth have critiqued what they describe as the woeful state of sex education. There is a need for more effective sexual health education for youth. In this paper we draw on the results of a large survey of Toronto youth to present the questions youth had about sexual health and the ways this information can inform sexual heath education.
METHODS: In The Toronto Teen Survey (TTS) we used a community based research approach to survey 1,216 youth through 90 workshops conducted by our trained youth advisory board. Youth were given a comprehensive list of sexual health topics (birth control, HIV/AIDS, health relationships, STIs, sexual pleasure, sexual violence, sexuality, healthy relationships) and asked to identify what they had learned and what they would like to learn about sexual health. At the end of the workshops, youth participants were invited to write down questions they had about sex and sexuality which were submitted anonymously to the facilitators for the question and answer period.
RESULTS: A total of 1,014 questions were submitted by over 80% of the youth participants. Our analysis shows a discrepancy between the sexual health topics youth have already learned about and what they want to know. While information about HIV was widely listed as something youth had already learned about, it was highly ranked as a topic on which they wanted more information. Other priority topics identified included: healthy relationships, sexual pleasure and sexual readiness.
CONCLUSIONS: The questions provide valuable information for developing curriculum on sexual health topics. Engaging youth in peer led discussions is an effective strategy for developing sexual health curriculum that has real meaning for them.

P345
DEVELOPMENT OF AN INTEGRATED HIV, STBBI & TB CO-INFECTION POLICY STATEMENT FOR KEY POPULATIONS IN CANADA

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Effective prevention and control strategies recognize that key populations at risk for and most affected by HIV infection may also be at increased risk for other sexually transmitted and blood borne infections (STBBI) and tuberculosis (TB). Common routes of transmission (e.g. blood, semen and other bodily fluids), risk behaviours (e.g. unsafe sexual and drug use practices), and risk factors (e.g. poverty, homelessness and overcrowding) are fuelling HIV, STBBI & TB co-infections in Canada, particularly in underserved populations. Acknowledging the commonalities and the synergistic relationship between HIV, STBBI and TB and

recognizing the need to streamline approaches to maximize intervention opportunities is essential to develop comprehensive, integrated approaches to address co-infections.
The Public Health Agency of Canada (PHAC) is undertaking work to build its capacity to address the issues surrounding co-infections and provide opportunities for information exchange with the establishment of the STBBI Issue Group, comprised of federal, provincial, and territorial governments, and an internal PHAC Co-infection Working Group. To domestically address HIV, STBBI & TB co-infections, the PHAC Co-infection Working Group is working toward developing an integrated co-infection policy statement for key populations.
An HIV, STBBI & TB co-infection policy will enhance the uptake of the best evidence and practices for integrated research, policies and programs for the prevention and management of primary and co-infections. It will provide guidance to healthcare workers to ensure that testing policies and programs consider the possible interrelation between co-infections and common risk activities. Canada's National HIV counselling and testing framework, the Canadian Guidelines on STIs and the Canadian TB Standards will be presented to showcase a co-infection policy approach.
It is in the interest of underserved/key clients to use comprehensive service disease approaches that capitalize on a single window of opportunity to reach them. A comprehensive multi-infection voluntary counselling and testing approach will assist in maximizing existing policies, programs, and services. To adequately provide integrated counselling and testing services, strengthening competencies in healthcare providers will be essential to ensure successful uptake and implementation.

P346
WITHDRAWN

P347
COMMUNITY REACTIONS TO THE STEP STUDY HIV VACCINE TRIAL SHUTDOWN: RECOMMENDATIONS FOR FUTURE TRIALS

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OBJECTIVES: The purpose of this investigation was to explore perspectives of individuals from diverse marginalized communities on the impact of the STEP Study HIV vaccine trial shutdown and implications for future trials.
METHODS: We designed and implemented a qualitative investigation in partnership between University of Toronto and Toronto- and Ottawa-based community organizations. Nine focus groups (n=72) included African and Caribbean black women (2), MSM (2), female sex workers (1), injection drug/crack using men and women (2), and Aboriginal men and women (2). Three groups were HIV-positives, six HIV-negatives. We conducted six key informant interviews with community leaders and healthcare providers. All groups/interviews were digitally recorded, transcribed and analyzed using NVivo and narrative thematic techniques from grounded theory.
RESULTS: Participants' (n=72) mean age was 39.5 years. Most (60%; n=43) were women. One-quarter (27%) identified as Caucasian, one-fifth Aboriginal, one-fifth Caribbean, 15% African, 7% Latino, 5% French-Canadian, 3% Asian/South Asian, and 2% mixed. Mean monthly income was $1272. Negative fallout from the HIV vaccine trial shutdown included: 1) perception certain groups were too vulnerable for participation; 2) mistrust; 3) volunteer fatigue; 4) fear of side effects; and 5) risk compensation. Support for future HIV vaccine trials emerged in beliefs that: 1) we can't give up; 2) human trials are necessary for scientific development; and, 3) participation of high-risk communities is essential. African-Caribbean and Aboriginal key informants and participants, in particular, highlighted the shutdown as reinforcing conspiracy theories and mistrust of Western medicine.
CONCLUSION: Despite negative fallout from the recent HIV vaccine trial shutdown, individuals from diverse communities articulated the importance of continued HIV vaccine research and involvement of their communities. Enhanced community engagement, clear dissemination of past trial results, individualized trial-related counseling, and mental health and substance use screening may promote informed participation and reduce vulnerability of future HIV vaccine trial volunteers.

P348
HIV IN OLDER ADULTS: SOCIOECONOMIC AND CULTURAL RISK FACTORS

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The HIV/AIDS epidemic has emerged as one of the greatest public health challenges in contemporary times. Despite increased awareness that HIV/AIDS affects all population sections, older adults are largely overlooked. Medical advances, including highly active antiretroviral therapy have dramatically reduced HIV related mortality. Consequently, infected adults live longer and age with the disease. HIV symptoms may be hard to detect in older adults because of co-morbidities associated with aging. Older adults may be isolated, depressed, stigmatized, discriminated against and uneducated about the disease despite their role as caregivers and supporters of family members affected by HIV.
Prevention remains the mainstay of the global response to HIV but testing and prevention campaigns exclude older adults. Research addressing the impact of HIV in older adults is also limited. This contributes to societies' reluctance to view HIV/AIDS as a general population problem and compounds limits in addressing HIV in older adults.
The goal of the study was to provide some insights on the risk factors for HIV infection among older adults. Data were collected qualitatively from six focus groups of adults, 60 years and older in rural Kenya.
Key findings suggest economic factors, behavioral and socio-cultural practices that put older adults at risk of HIV infection, directly through sexual contacts and indirectly through interaction with family and friends infected with the virus. Rural older adults' role as traditional healers, birth attendants, and circumcisers also exposes them to infection due to lack of knowledge about effective prevention and the unavailability of universal precautions resources.
Recommendations include open discussions, community forums on HIV/AIDS, engaging political and religious leaders in prevention efforts, training older adults in voluntary counseling and testing, providing services in rural communities and an integrated approach to HIV/AIDS interventions. The social-economic impact of the epidemic on older adults requires further research.

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SOCIAL AND COMMUNITY APPROACHES TO HIV VACCINE DISSEMINATION AMONG MSM AND TRANSGENDERS IN THAILAND: A MIXED-METHOD INVESTIGATION

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OBJECTIVES: HIV prevalence among MSM in Bangkok (30%) and Chiang Mai (16.9%) (Pliplat et al., 2008) rivals the hardest hit regions of sub-Saharan Africa. Thailand has also hosted more HIV vaccine trials than any other LMIC. We assessed the acceptability of future HIV vaccines and the impact of various factors on vaccine acceptability to provide empirical support for advancing tailored combination prevention.
METHODS: Phase 1: in depth 45-minute, semi-structured interviews in Thai and English; Phase 2: structured 30-minute Thai-language survey questionnaire. Participants were MSM, male sex workers (MSW) and male-to-female transgenders recruited from LGBT, MSW and HIV prevention organizations, and nightclubs in 3 Thai cities. We analyzed phase 1 data using narrative thematic techniques from grounded theory; and phase 2 using conjoint analysis and a fractional factorial design to assess acceptability of 8 hypothetical HIV vaccines with different attribute profiles.
RESULTS: Participants: Phase 1-(n=30) 14 MSM, 8 MSW, 3 transgender, 5 HIV experts; Phase 2-(n=232) 87% male (74% gay-identified), 13% transgender, median age=26. HIV vaccine acceptability averaged 56.8 on a 100-point scale, ranging from 71.8 (SD=30.1) to 30.3 (SD=33.1) depending on characteristics of the vaccine. Acceptability was slightly lower among transgenders versus males. False-positive HIV-testing (18.8, SD=28.7) emerged as the most important attribute, followed by efficacy (16.0, SD=25.2), side effects (9.0, SD=21.2) and cost (3.3, SD=20.5). Phase 1 data elucidated the power of HIV and anti-gay stigma in posing barriers to HIV vaccine access; and the importance of community, peer and family

reactions; transgender-specific, gay-affirmative and non-gay-identified venues; and confidential dissemination; and corroborated more than nominal (1000 baht=$33CAD) cost as a barrier to uptake.
CONCLUSIONS: Targeted social and community interventions to combat HIV/AIDS and anti-gay stigma, promotion of HIV vaccine uptake as a prosocial behavior to support the community and nation (in contrast to individual-based approaches), and government and pharmaceutical company cost subsidies may ensure the effectiveness of future HIV vaccines as a component of combination behavioral and biomedical prevention among vulnerable communities in Thailand.

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ENGAGING GENERAL PRACTITIONERS - REDUCING STIGMA AND DISCRIMINATION FOR GAY MEN, BI-SEXUAL MEN AND MEN WHO HAVE SEX WITH MEN

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General Practitioners are more often than not the first person sought by those needing health information, assessment, or referral. However, evidence suggests that barriers exist for a cohort of men effectively decreasing their access to health services. Men who have sex with men (MSM), including many who do not identify as gay or bisexual, encounter stigma and discrimination – barriers that ultimately impact their health.
Many healthcare stakeholders, because of discomfort and/or lack of current information and relevant resources, avoid communication regarding sexual health and practices, however effective health communication has the potential to be a powerful force in improving this population's health (Gay and Lesbian Medical Association and LGBT health experts, 2001).
Engaging physicians to promote and support barrier free access to health services for gay men, bisexual men and MSM in the Interior Health Authority region will improve health outcomes for this target population and improve patient/physician satisfaction.

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FACTORS THAT INFLUENCE NEWCOMER YOUTH' ACCESS TO HIV/AIDS PREVENTION PROGRAMS AND SERVICES: A TORONTO CASE STUDY

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INTRODUCTION: Newcomer youth – immigrants, refugees, or 'non status' youth who have lived in Canada for 5 years or less – are some of the fastest-growing populations affected by HIV/AIDS in Ontario. Newcomer youth aged 15-24 comprise 17% of Toronto's population, yet we know very little about their health. This paper will map out some general issues that newcomer youth face in accessing HIV prevention information and services.
METHODS: We adopted a community based research approach and trained our youth advisory committee to conduct 90 community workshops and collect surveys (n=1,216). We also conducted five focus groups with newcomer- serving organization.
RESULTS: Our sample consisted of 138 newcomers. 60% were Asian, 23% Black, 3% white, 5.8 % multiracial, and 6% identified as 'other'. HIV/AIDS was among the top three topics that newcomer youth wanted to learn more about. 18% of newcomers reported never having received sexual health education, compared to 6% of their Canadian-born peers. Qualitative data analysis revealed that religious and cultural attitudes towards "sex" and "virginity" put youth at risk of engaging in behavior such as unprotected anal sex. Undocumented youth were identified as being particularly at risk for HIV. These youth may avoid going to clinics due to fears of being turned into the police. The service providers identified the current funding mechanism as an important barrier to serving undocumented youth. It was made known that some service providers avoid providing information to their clines about HIV altogether based on the argument that their community "doesn't need it". Gender stereotypes, homophobia, and parent-youth conflicts were identified as barriers to accessing information and services.
CONCLUSIONS: Effective HIV prevention services should be sensitive to the unique vulnerabilities of newcomer youth. 'Newcomers', however, are not a homogeneous group as a range of individual and social factors differentially expose youth to HIV transmission.

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A QUALITATIVE STUDY OF INJECTION INITIATION AMONG STREET-INVOLVED YOUTH WHO USE DRUGS IN VANCOUVER: IMPLICATIONS FOR STRATEGIES TO PREVENT THE ADOPTION OF INJECTION DRUG USE

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INTRODUCTION: Injection drug use is prevalent among street youth, and elevated levels of HIV risk behaviour exist among this population in many Canadian cities. Interventions to prevent the uptake of injecting among non-injection drug users represent an important, though underutilized, HIV-prevention strategy. In order to inform efforts to prevent the transition to injecting among young drug users, we conducted a qualitative study of injection initiation among drug using street-youth in Vancouver.
METHODS: We explored the transition towards injecting and first injection experiences through a series of 23 qualitative interviews with street-youth who inject drugs. Participants were recruited from the At-Risk Youth Study (ARYS), a cohort of drug using street-involved youth. Interviewees were aged 16 to 26, and included 10 female drug users. Audio recorded interviews were transcribed verbatim and a thematic analysis was conducted.
RESULTS: Qualitative interviews indicate that the transition towards injecting is influenced by evolving perceptions of injecting behavior and social interactions with individuals who have previously injected drugs. Initiates were frequently introduced to injection by another drug user who was well-known to them, and facilitated the first injection episode. Interview data indicate that social conventions discouraging initiating young drug users into injecting exist among some established injectors, although this "code" is often ignored.
CONCLUSION: Our finding that young drug users are socialized into injecting by other drug users suggests that prevention efforts should explore the potential of social interventions to complement conventional educational messages. Initiatives targeting youth at-risk of injecting may benefit from delivering prevention messages through drug user networks in terms meaningful to youth. Additionally, developing strategies to engage current injectors who are likely to initiate youth into injection could also benefit prevention efforts.

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HOUSING INSTABILITY AND PEOPLE LIVING WITH HIV/AIDS IN ONTARIO: THE IMPACT OF HOUSING INSTABILITY ON MENTAL HEALTH

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This is the first longitudinal CBR initiative in Canada to examine housing and health in the context of HIV. Participants completed two face-to-face interviews across the study period, one at baseline and one at 12 months. A total of 605 participants were recruited from across Ontario for face-to-face quantitative interviews, 549 participants (90%) went on to participate in the 6 month follow up and 511 participants (85%) were interviewed at 12 months. Fifty participants engaged in a qualitative sub-study aimed at enhancing our understanding of the housing experiences of PHAs.
METHOD: Seven HIV positive individuals throughout the province of Ontario were employed and trained as Peer Research Assistants (PRAs). This paper highlights qualitative findings emerging from in-depth interviews by PRAs with Fifty participants out of a larger sample of 605 PHAs across the province of Ontario, Canada. The participants were sampled by region, aboriginal status, ethno-racial status, sexual orientation and gender. Participants were asked questions related to physical and mental health since their HIV diagnosis; changes in their housing status since

diagnosis; Factors that put their housing at risk; access to care; and experience of stigma and discrimination. Interviews were transcribed and underwent thematic analysis.
FINDINGS: Qualitative findings suggest that housing instability has a negative impact on the mental health of people living with HIV. These issues are exacerbated for PHAs from vulnerable communities. The findings also highlighted the relationship between HIV, housing instability and other social determinants of health on the overall mental health related quality of live of PHAs in Ontario.
IMPLICATIONS: There is a need to develop housing policies and interventions that address the unique needs of PHAs with mental health issues and that works toward minimizing the risk of decreases in mental health related quality of life of people living with HIV in Ontario.

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CHARACTERISTICS OF ASIAN BATHHOUSE USERS

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The Asian Community AIDS Services has been developing programs and providing HIV/AIDS education prevention to Asian men having sex with men (AMSM) in Toronto.
To describe the characteristics of Asian bathhouse users and the feasibility of creating a bathhouse outreach worker program called Sexpert where peer volunteers would negotiate and/or promote safer sex and/or drug behaviours and provide information about HIV/AIDS.
A total of 101 AMSM were interviewed.
Participants for the study were asked about their health knowledge, attitudes, behaviours, self-image, perceived support, STIs, testing and degree of bathhouse use. The interview incorporated socio-demographic information, the CES-D depression inventory, sexual and risk behaviour activities, disclosure, attitudes, and sense of belonging and interaction with society. Bathhouse users were also approached for their willingness to meet with a volunteer counsellor (Sexpert) to discuss ways to improve and/or change risky behaviours. This was an opportunity for potential Sexperts to gain further knowledge about HIV/AIDS and develop skills in sharing knowledge of safer sex and/or drug behaviours with others in a bathhouse setting.
The study results confirm that a significant portion of bathhouse users (two-thirds of this sample) also participate in sex with men in other public sex environments and on internet sites, indicating these are not discrete populations among Asian MSM in Toronto. Those interested in becoming Sexperts did practice safer sex behaviours as indicated by their: greater number of safer anal sex contacts with both regular and casual partners; having shared knowledge about safer sex behaviours almost every time they had sex in the past six months; interest in discussing important topics; giving greater importance to reducing risk behaviour; and stronger sense of belonging to: their workplace, church, school, community; gay groups; and the bathhouse itself.
Since Sexpert volunteers differed in both their report of employing safer behaviours and in their sense of belonging to various communities, possible efforts to promote a stronger sense of belonging among one half to two thirds of these bathhouse respondents would also have potential as a prevention, harm reduction strategy.