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Importance of Health Services and Access to Care for Vulnerable Populations

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HIV AND DEPRESSION: THE EXPERIENCE OF CANADIAN ABORIGINAL PEOPLE LIVING WITH HIV

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Plain Language Summary: This CBR project explores the experience of depression among Aboriginal peoples living with HIV/AIDS. In in-depth interviews, participants describe root causes of depressions, how they respond to and how service might better account for these needs. Our findings suggest the complexity of this experience, including past traumatic events, substance use, and HIV itself. For many participants, HIV and depression lead many to (re)connect with culture and community and to use traditional approaches to healing.

Objectives: This community-based research project explores HIV and depression among Aboriginal people living with HIV/AIDS. In particular, the study examines how participants understand the roots of their depression, what they do about their depression, and how formal service provision might better respond to their needs.

Methods: Using a narrative approach, we asked participants to tell their own story of sadness or depression. Participants included men, women and transgendered individuals at various stages of HIV infection in 7 Canadian cities. In partnership with community collaborators, we recruited 71 First Nations, Métis, and Inuit participants for in-depth interviews. Verbatim transcripts were analyzed for emergent themes.

Results: Our findings suggest that, in the narratives of our participants, the relationship between HIV and depression is complex, multi-directional and significantly influenced by culture. Some participants report that family disruption, homophobia, sexual abuse, and cultural disconnection caused by adoption into non-Aboriginal families brought on early experiences of depression that sometimes led to high risk coping mechanisms such as unprotected sex or substance use. Other participants report that being diagnosed with HIV and the stigma they experience in their communities as a result of their HIV infection, sexual identity, or injection drug use, is a primary cause of their depression. Still others report that medications and their side effects contribute to their depression while others report that substance use is both cause and effect of depression. The cumulative stress of living on a fixed income in sub-standard or unstable housing was a key contributor to the depression of many participants and in almost all cases, depression or depressive episodes impacted participants' willingness and ability to care for their HIV. However, the news is not all bad. For many participants, depression and HIV infection was the catalyst to connect (or reconnect) to their culture and community, and to traditional approaches to healing. For these participants, the experience of living with HIV and depression has been transformed and transformative.

Conclusions: HIV and depression are linked in myriad ways in the narratives of our participants. Service providers are reminded that depression among Aboriginal people living with HIV/AIDS is a complex issue that must be viewed from a cultural perspective. Participant recommendations are offered to other APHAs who might be dealing with depression that include connecting with community and culture. Implications for service providers include facilitating this connection and treating depression holistically. Acknowledgements: This project has been supported with a grant provided by The Ontario HIV Treatment Network and the Canadian Institutes of Health Research.

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SERVICE PROVIDER PERSPECTIVES ON HIV AND DEPRESSION AMONG ABORIGINAL PEOPLE LIVING WITH HIV/AIDS

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Plain Language Summary: This community-based project explores HIV and depression among Aboriginal people living with HIV/AIDS (APHAs) from the perspective of service providers. We aim to understand how formal service provision might better respond to the needs of APHAs.

Objectives: We examine the challenges that providers face in providing support to APHAs with depression, how they understand the roots of depression, and how they view the place of western and traditional Aboriginal approaches to healing.

Methods: We conducted in-depth interviews with about 25 service providers from various backgrounds, such as social workers, psychiatrists, addiction counsellors, elders and traditional healers, in four Ontario cities. We asked them to describe their work with depressed APHAs, how they view the roots of their clients' depression, the practice challenges they face, and how they view the role of traditional approaches to healing. Verbatim transcripts were analyzed for emergent themes.

Results: Early analysis of our data reveals a range of complex concerns that relate to the history of Aboriginal communities in Canada, such as APHA experiences of racism in service agencies, isolation from community, struggles with addictions, and community experiences of depression. Practitioners can hold considerably different views about the nature and causes of depression among APHAs. Service providers spoke of a range of supports they try to put into place to meet the cultural needs of APHA clients. Service providers often supported the use of traditional approaches to healing. Even those who hold fairly Western views of depression believe that traditional approaches are often helpful. Western practitioners and Aboriginal healers alike believe that services would be improved by more contact between those providing support to APHAs from different cultural traditions, although few have actually developed strong ties.

Conclusions: The study reveals some of the specific concerns of service providers with regard to APHAs dealing with depression. The paper outlines some of the challenges in developing culturally appropriate services and identifies recommendations for change.

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BARRIERS AND OPPORTUNITIES FROM THE COMMUNITY PERSPECTIVE: PRELIMINARY FINDINGS FROM A COMMUNITY-BASED RESEARCH ON MENTAL HEALTH SERVICE ACCESS FOR IMMIGRANTS, REFUGEES AND NON-STATUS PEOPLE LIVING WITH HIV/AIDS

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Plain Language Summary: Mental health care constitutes a critical component of the overall treatment and management of HIV. Immigrants, refugees and non-status individuals living with HIV/AIDS (I&R-PHAs), however, face complex barriers in accessing mental health services that take into consideration their culture, migration experiences, as well as HIV/AIDS conditions. This presentation will describe an ongoing community-based action research that aims to improve mental health service access for I&R-PHAs. Results from focus groups and interviews with I&R-PHAs highlight the importance of service provider training and coordinated services that respect I&R-PHAs' cultural understanding of mental health and acknowledge the compounding effect of multiple stressors faced by I&R-PHAs.

Objectives: This action research seeks to improve I&R-PHAs' access to mental health services and to facilitate multidisciplinary collaboration in order to achieve best practices and influence policy change. The service user component of the study explores I&R-PHAs' mental health needs, coping strategies, help seeking behaviours, service utilization experiences, and ideas for improving existing services to better meet their needs. These findings will later be integrated with results from the service provider component of the study, thus allowing investigators to develop a holistic service provision strategy.

Methods: Focus of this study is directed to immigrants, refugees, and non-status individuals currently residing in the Greater Toronto Area who migrated from Africa, the Caribbean, South Asia, Southeast/East Asia, or Spanish-speaking countries in Central/South America. Through convenience sampling and snowballing, 50 I&R-PHAs from the target groups were recruited to participate in either semi-structured interviews or focus groups.

Results: I&R-PHAs constantly face a combination of stressors related to their HIV condition, the migration and settlement process, social stigma, and discriminations. Cultural beliefs play an important role for I&R-PHAs, influencing not only their understanding of mental health but also their coping strategies. When accessing services, I&R-PHAs often face ill treatment from service providers. Lack of information on services available, long wait time, and language barriers have also impeded I&R-PHAs' access to timely and appropriate care. Social support emerges as an important protective factor for maintaining I&R-PHAs' mental wellbeing.

Conclusions: Improving I&R-PHAs' access to mental health services require a comprehensive strategy. Ongoing education and training for service providers is essential to cultivate awareness, develop professional expertise, and facilitate positive attitude change. Dialogues and collaborations amongst practitioners across sectors are necessary to develop a coordinated, client-centered service model. Stigma and discriminations faced by I&R-PHAs also need to be addressed through public education in order to encourage service utilization.

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ETHNIC AND GEOGRAPHIC DIFFERENCES IN ACCESS TO GENOTYPIC RESISTANCE TESTING IN ONTARIO

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Plain Language Summary: Access to HIV-related interventions has often been inequitable, with some marginalized groups receiving delayed or decreased levels of care. We examined whether access to genotypic resistance testing (GRT), a new advance in the care of people living with HIV, was equitable. We used the OHTN cohort study, a clinical database of HIV+ patients accessing care in the province of Ontario. We found better access to genotypic resistance testing for those of non-white race, those who lived in Toronto, and those who had used a higher number of antiretrovirals.

Objectives: We examined whether access to genotypic resistance testing (GRT), a new advance in the care of people living with HIV, was equitable. Our study was based in Ontario, the province with the largest HIV-positive population in Canada, where GRT was available without charge to patients.

Methods: We linked two data sources for this study. Clinical and demographic information came from The Ontario HIV Treatment Network Cohort Study (OCS), a longitudinal study of people receiving care in HIV primary and specialty clinics in Ontario. Data are collected prospectively through review of clinical charts. Administrative data regarding GRT testing were obtained from the Ontario Ministry of Health and Long-term Care, which performs virtually all tests in Ontario. We included those participants with complete medication data who could be linked deterministically between the two sources. We designated a participant as eligible for GRT when they met the Ministry's guidelines pertaining to viral load levels and medication histories. Patients were censored if they died, were lost to follow-up, or at the time of last data collection. We used time-to-event analysis and analyzed potential correlates using the log-rank test and Cox proportional hazards method.

Results: Of 503 evaluable participants, 278 (55.3%) had a GRT. The median (interquartile range) of time to GRT testing was 126 days (53 to 335). In the entire cohort, the mean (\pm standard deviation) age was 43.4 (\pm 8.34), 89% were men, 16% were non-white, 77% had a high school education or higher, 12% had a history of injection drug use, and 43.3% lived in Toronto. The median time since diagnosis of HIV was 8.7 years (IQR 6.1 to 11.6); 35% had a previous AIDS-defining condition. At the time of GRT eligibility, the mean viral load was 4.2 log₁₀ copies/mL (\pm 1.03) and the mean CD4 count was 323 cells/mm³ (\pm 248). In univariate analysis, the variables associated with early access to GRT were non-white race, residence in Toronto, a history of past AIDS, number of ARV's taken before eligibility, and baseline CD4 count. In multivariable analysis, the relative hazard of having an early GRT was 1.62 (95% confidence interval 1.22 to 2.14) for Toronto residents, 1.38 (0.99 to 1.92) for non-white participants, and 1.10 (1.04 to 1.16) for each additional antiretroviral taken before eligibility.

Conclusions: Our results suggest that access to GRT was delayed for HIV-positive participants living outside of Toronto. Paradoxically, we found that non-white participants had enhanced access to GRT testing. This finding suggests that systemic barriers for non-white participants may be less important in the context of a universal health care system.

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Monday, November 27, 2006 – 11:30 a.m.

Understanding our MSM Communities

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MEN WHO HAVE SEX WITH MEN AND INTERNET SEX SEEKING: GAPS IN UNDERSTANDING AND DIRECTIONS FOR RESEARCH

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Plain Language Summary: Men who have sex with men (MSM) are using the Internet to find sexual partners. While studies on this practice have been conducted, many questions about the totality of the experience, important for designing prevention efforts, remain unexplored. It is argued that qualitative approaches, which seek to understand the perspective of MSM who look for sex partners online and the “culture” of online sex seeking, are needed to help inform prevention efforts which better engage men who seek sex online.

Objectives: To illustrate gaps in the literature on the practice of Internet sex seeking (ISS) among men who have sex with men (MSM). MSM are increasingly using the Internet to find sexual partners, in Canada and elsewhere. There is global concern about the relationship of ISS and risk behaviour for HIV/STI transmission. The design of effective HIV prevention efforts requires further understanding of this practice.

Methods: A review and critique of the extant literature on ISS among MSM.

Results: Most work on ISS is quantitative, lacks theoretical drive, and focuses on the characteristics and risk profiles of MSM who seek sex online. Qualitative work is minimal. A recent meta-analysis showed that approximately 40% of MSM seek sexual partners online, and about 30% have had sex with a man they met online. A higher prevalence of unprotected anal intercourse (especially with serodiscordant partners) was found among MSM who sought sex online than those who did not. While debate continues about whether ISS facilitates risk behaviour, unprotected sex does occur through ISS.

Conclusions: The literature includes few attempts at investigating the underlying factors of ISS, like motivations for ISS; partner selection online; and sexual negotiation in encounters arranged online vs. offline. Little has been said about how the Internet makes sex seeking more convenient and efficient and how this may impact risk behaviour, or how non-gay-identified men use the Internet to find and negotiate sex with male partners. More investigation is required into how broader factors may impact the complete ISS experience, from turning to the Internet to find sexual partners through negotiation of safer sex. Social risk theoretical approaches are important to understand how risk is socially-situated in these encounters. Qualitative methods are of utmost importance for a more complete understanding of the Internet sex seeker’s point of view, which has been noticeably absent. Inquiry into these gaps will provide a more thorough understanding of the ISS experience for the design of innovative HIV prevention.

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RESEARCH ON HIV SEXUAL RISK BEHAVIOUR AMONG MSM FROM ETHNO-RACIAL COMMUNITIES: A SYNTHESIS OF THE LITERATURE

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Plain Language Summary: A review of the academic research and community literature on ethno-racial gay, bisexual and other men who have sex with men (henceforth defined as MSM) from ethnic and racial communities, revealed a lack of HIV-related research with these populations. As the HIV risks and needs of these populations may be different from the mainstream gay population, efforts should be made to increase research capacity and output of HIV research relevant to ethno-racial MSM.

Objectives: To examine the available literature related to risky sexual behaviour and HIV/AIDS prevention among ethno-racial MSM in the developed world.

Methods: We undertook an examination of the available literature specific to HIV risk and prevention among MSM from ethno-racial communities from the year 2000 onward. Scientific databases were examined (Medline, Psycinfo and Sociological Abstracts) as well as abstracts from the International AIDS Conferences, Canadian Association for HIV Research conferences, and the Ontario HIV Treatment Network conferences. Community based research reports were also solicited.

Results: We found 93 journal articles and 31 abstracts examining risky sexual behaviour among ethno-racial MSM. Only 5 articles and 9 abstracts were conducted in Canada. Similarities among ethno-racial groups regarding social determinants of risky sexual behaviours included racism, economic difficulties, language barriers, homophobia and HIV stigma. Similarities among ethno-racial group regarding individual determinants of risky sexual behaviours included alcohol and drug use, and perceived peer norms not supporting condom use. Findings also suggested differences between groups and within each group regarding determinants of risky sexual behaviour.

Conclusions: Findings confirm that ethno-racial MSM have been underrepresented in the current literature regarding determinants of HIV sexual risk behaviour. Social and behavioural research among new Canadians and their children is severely limited and it is unknown to what extent research on U.S. and British MSM can be generalized to Canadian populations. The lack of currently available research literature suggests a pressing need for increased social and behavioural research specifically targeting the needs of ethno-racial MSM in Canada. Future research should seek to address the diversity between ethno-racial groups as well as within each group so that specific, evidence-based strategies toward HIV prevention can be created to promote the health of ethno-racial MSM in Canada.

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GETTING TO KNOW THE COMMUNITY: WHO ARE THE BLACK MEN WHO HAVE SEX WITH OTHER MEN IN TORONTO?

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Plain Language Summary: Canadian studies of the determinants of HIV infection among gay and bisexual men and other sexually active men have included Black men who have sex with other men (BMSM), but the results and service implications are often indeterminate. This results in an incomplete understanding of relationships, behaviours and vulnerability to HIV among BMSM.

Objectives: -Characterize BMSM in Toronto in terms of their socio-demographic characteristics, sexual relationships and sexual behaviours; - Determine correlates of sexual risk behaviour, and differences among BMSM related to their sexual behaviours; -Examine the experiences, influences and decision-making associated with (un)protected sex among BMSM, and how these experiences and sexual behaviours may define microcultures of BMSM; -Understand how BMSM interpret and assess current HIV prevention campaigns, and the extent to which the campaign messages influence their sexual behaviours.

Methods: The study will be in three parts. It will commence with interviews with key informants from ASOs, other health-related organizations, African and Caribbean community organizations, BMSM networks, and individuals experienced and knowledgeable about BMSM networks. Then, BMSM aged 18 years and older and living in Toronto will be eligible for a survey. Participants should have had sex with another man at least once in the preceding year. Both Canadian-born and immigrant BMSM will be eligible to participate. We will also conduct in-depth interviews with 24 men, equally divided between men claiming an African or Caribbean identity. The in-depth interviews will complement the survey data to allow a more nuanced interpretation and understanding of behaviours related to HIV, and decision-making about those behaviours.

Results: Important progress has been made since our study was first announced. A full progress report will be presented at the conference.

Conclusions: BMSM tend to be lost in discussions about HIV risk and prevention among gay and bisexual men. This study is an important departure from the established tradition in MSM research in Canada. It will result in a vastly improved profile and understanding of sexual behaviours and other health determinants among BMSM. The study will establish a baseline from which other studies of BMSM in Canada will follow. It is hoped that the results will influence needed improvements in the prevention and support activities of ASOs and related organizations, particularly those with a special interest or mandate in working with African and Caribbean communities.

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GAY AND BISEXUAL MEN WHO HAVE UNPROTECTED SEX MOST OR ALL OF THE TIME

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Plain Language Summary: Following on the Toronto Pride survey 2005 which identified several salient characteristics of MSM having unprotected sex most or all of the time, we invited a set of 34 men meeting these characteristics for interview.

Objectives: To identify the circumstances and discourses of MSM who use condoms infrequently as a foundation for developing specific, culturally-appropriate messaging that speaks to the needs of diverse sets of MSM.

Methods: Follow-up interviews with 34 men who agreed with either of two statements which most distinguished men having unsafe sex from those having safe sex on the Toronto Pride survey 2005. The statements were: (a) I respect whatever the guy wants regardless of whether he's positive or negative? If he wants to use a condom, that's fine, and if he doesn't, that's fine too? or (b) If I lose my erection with a condom on, I prefer to have sex without it.

Results: While there is no single profile of men who usually bareback, several recurrent themes emerge from the speech of the 20 HIV-positive men. Condoms are perceived as exacerbating erection problems, which in turn interact with: feelings of loneliness combined with drug use that intensify a desire for unprotected sex as a sign of intimacy; habits of having unprotected sex with other poz men which extend into a general policy in meeting new partners; presumptions of other men's sero-status arising from reading on-line profiles; deferring to a subtle etiquette based on reading signs of partners' preferences; belief in context-specific norms of disclosure or need for condom use. Among the 14 HIV-negative men, unprotected sex is more often associated with: regarding being a top with other men as low risk, gaining a sense of trust with a regular partner, as well as drug use.

Conclusions: Effective prevention will require making headway in two major areas: (1) on the problems of losing an erection with condom use, depression/loneliness, and substance use, and (2) on the changing understandings making up the sexual cultures of particular circuits or microcultures.

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HIV VACCINE TRIAL CONCERNS AMONG PERSONS AT HIGH RISK FOR HIV INFECTION

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Plain Language Summary: The development of preventive HIV vaccines is one of the highest priorities in HIV/AIDS research. Tens of thousands of volunteers at high risk for HIV infection will be needed to participate in clinical trials for the foreseeable future. However, very limited research has explored reasons for enrolling or declining to enroll in an actual HIV vaccine trial. The purpose of this study was to explore, in depth, the reasons for declining to participate among persons at high risk for HIV infection who screen in as eligible to enroll in an HIV vaccine trial.

Objectives: 1. To explore concerns and reasons for declining to enroll in an HIV vaccine trial among adults at high risk for HIV infection; and 2. To explore knowledge and beliefs about HIV vaccine clinical trials.

Methods: Individuals who screened in as eligible for a Phase IIb HIV vaccine trial, but declined to enroll, were invited to participate in a socio-behavioral study. Trial selection criteria included: 1) 18-45 years old; 2) HIV-1 seronegative men and women; 3) two or more sexual partners in the last year or unprotected anal sex in the last year. Participants (n=15) completed a confidential, self-administered questionnaire. Semi-structured face-to-face interviews were then conducted to explore, in depth, concerns and motivators regarding enrolment, and reasons for not enrolling in the HIV vaccine trial. Interviews were digitally recorded, transcribed verbatim and analyzed using N-VIVO qualitative software and narrative thematic analysis.

Results: Altruistic motivations to enroll in an HIV vaccine trial were subjugated by concerns about the trial itself and negative consequences of enrollment. Trial-specific concerns were: 1) uncertainties about a novel experimental vaccine; 2) uncertainty about vaccine effectiveness; 3) double-blind assignment to experimental or placebo group; 4) potential for increased high-risk behaviour; and 5) inadequate remuneration for participation. Feared consequences of trial enrollment were: 1) stigma; 2) false-positive HIV tests; 3) impact on intimate relationships; 4) difficulties with employment; 5) and problems with health or life insurance.

Conclusions: HIV vaccine trial-related concerns and fears among persons who screen in as eligible yet decline to enroll suggest individual- and community-level interventions to facilitate informed trial participation. Adaptations to recruitment (e.g., explanations of “experimental vaccines” and placebo-controlled trials), implementation (e.g., ratio/method of experimental vaccine/placebo assignment; reasonable increases in incentives) and community interventions to counter stigma and avert negative social consequences of trial participation may be feasible methods to increase informed HIV vaccine trial enrolment.

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EVALUATION OF HIV VACCINE VECTORS IMPLEMENTED WITH ANTI-APOPTOTIC MOLECULE M11L IN MICE

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Plain Language Summary: Cytotoxic T lymphocyte (CTL) responses play an important role in controlling HIV in infected patients. Therefore, the ability to stimulate strong CTL has become a priority for an AIDS vaccine. Apoptosis is a cell death process naturally exists in all living cells. Apoptosis is a key mechanism involved in HIV gp120-induced cell death and immune clearance of gp120-expressing cells, the process often reduces the immunogenicity of HIV vaccines. M11L is an apoptosis inhibitor expressed by a rabbit poxvirus called myxoma virus. In our study, we found that HIV DNA vaccine containing M11L, together with a commonly used immune adjuvant CpG motif, strongly enhanced the ability of the vaccine to activate immune cells against HIV antigen in mice.

Objectives: HIV-specific cytotoxic T lymphocyte (CTL) responses play an important role in controlling HIV replication and disease progression, therefore the ability to elicit potent CTL has become a priority for an AIDS vaccine. However, induction of CTL memory responses of sufficient magnitude, breadth and durability remains a hurdle for CTL-based vaccines. We constructed an HIV vaccine vector implemented with an apoptosis inhibitor, M11L, derived from a rabbit poxvirus, myxoma virus. M11L localizes to mitochondria and inhibits apoptosis by binding to the key apoptotic inducers PBR, Bak and Bax. Our hypothesis is that DNA vaccine vectors containing M11L will provide long-lasting antigen expression to enhance immunogenicity.

Methods: A rev-independent, codon optimized HIV clade B envelope sequence (gp140) was inserted into a novel DNA vaccine vector pHERO that is stably maintained in dividing cells. The gene encoding M11L and/or a murine CpG motif as vaccine adjuvant was also inserted into the HIV pHERO vector. Immunogenicity of these constructs in vivo was evaluated in BALB/C mice, using intramuscular priming with DNA followed by boosting with ALVAC vcp205 containing HIV genes. HIV-specific cellular immune responses were assessed by IFN-gamma ELISPOT assays and CTL cytotoxic killing assays. The phenotype of HIV-specific CD8+ memory T cells was determined by immunostaining followed by flow cytometry.

Results: L cells transfected with pHERO containing M11L expressed a higher level of HIV gp140 and exhibited a lower level of apoptosis than in the absence of M11L. Spleen cells collected from mice primed with pHERO DNA vectors containing M11L exhibited significantly stronger CTL memory responses to HIV envelope peptides as determined by both IFN-gamma ELISPOT assays and CTL cytotoxic killing assays. More interestingly, the combination of M11L and CpG provided the strongest adjuvant effect and dramatically enhanced the immunogenicity of the HIV DNA-ALVAC prime-boost vaccine. In addition, the vaccine containing both M11L and CpG induced high level of HIV-specific CD8+ central memory T cells.

Conclusions: DNA vectors implemented with anti-apoptotic molecule M11L primes stronger immune responses in a prime-boost approach with ALVAC vectors in mice. This may provide a novel strategy to modify vaccines to fight against infections and cancer.

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HIV-1 GP120 IS ASSOCIATED WITH DYSREGULATION OF THE IMMUNE RESPONSE IN ACUTE SHIV INFECTION

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Plain Language Summary: Being part of the outer layer of the HIV virus that the immune system encounters first, gp120 protein is determining factor for the way in which the virus is eliminated or remains and causes disease. In this study we used a macaque model of early infection with the SHIV virus that contains the HIV-1 outer layer. We found significantly more gp120 in lymph nodes compared to blood, accumulation of Treg cells that promote tolerance and suppress an active immune response and a T cell unresponsiveness to gp120.

Objectives: Analysis of the effects of HIV-1 gp120 on T cell distribution and function

Methods: We used the lymph nodes and blood from acutely SHIV virus infected macaques. Immunofluorescent staining for gp120 was done on fresh frozen LN. Lymphocytes were isolated from LNs and blood and multiparameter staining and flow cytometry was done for gp120, CD3, CD4, CD8, CxCR4, CCR5, CD25. Functional capacity of the cells was assessed by stimulation with SHIV 89.6P Env peptides and multiparameter staining and flow for CD3, CD4, CD8, perforin, CD107, IFN γ , and TNF α .

Results: We demonstrated by immunofluorescent staining with V3 447-52D antibody a widespread distribution of gp120 in lymph nodes tissue derived from acutely SHIV infected macaques. Furthermore, a significantly higher percentage of isolated lymph node CD4+ and CD8+ lymphocytes actively expressed gp120 on their surface compared to the PBMC's. Significant depletion of the CD3+CD4+ cells was seen in both compartments and the percentage of CD3+CD4+CD25+ regulatory T cells was significantly upregulated in LNs compared to blood. When compared to peripheral blood, LN CD3+CD8+ T cells showed consistently less degranulation in response to envelope as assessed by CD107a expression on their surface and intracellular staining for perforin. In addition, secretion of IFN γ and TNF α in response to stimulation with SHIV envelope peptides was higher in peripheral blood than in LN CD4 and CD8 lymphocytes.

Conclusions: We conclude that, in acute SHIV infection, CTLs are anergic in response to gp120 and there is accumulation of tolerogenic regulatory T cells in areas where gp120 is abundantly present. We found LNs to contain significantly more gp120 than blood.

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MACAQUE MULTIMERIC SOLUBLE CD40 LIGAND AND GITR LIGAND CONSTRUCTS ARE IMMUNOSTIMULATORY MOLECULES IN VITRO

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Plain Language Summary: New vaccine adjuvants are needed to increase the strength of experimental HIV vaccines. In our previous research, it was found that two proteins essential to the immune system can act as strong vaccine adjuvants in mice. These immune-activating proteins, CD40 Ligand and GITR Ligand, are able to increase the activity of the immune system. They are most effective when made as recombinant clustered proteins by attaching the clustering region of proteins SP-D or adiponectin to the active portion of CD40 Ligand and GITR Ligand. In the present study, these same recombinant genes were constructed using macaque cDNA clones. These molecules were tested for their immune-activating ability and found to strongly activate both human and macaque immune cells.

Objectives: CD40 ligand (CD40L) and GITR ligand (GITRL) are TNF superfamily molecules that can be used as vaccine adjuvants. In a previous HIV DNA vaccine study in mice, we found that plasmids expressing multimeric soluble forms of trimeric CD40L (i.e. many trimers) were stronger activators of CD8+ T cell responses than were single trimer soluble forms or the natural membrane-bound molecule. This report describes similar multimeric soluble molecules that were constructed for use in future macaque SIV vaccine studies.

Methods: cDNA clones of macaque Acrp30 (adiponectin), GITRL, and Surfactant Protein D (SP-D) were obtained from macaque lung and adipose tissue total mRNA. These genes, together with a previously cloned macaque CD40L gene, were used as templates to construct macaque versions of the recombinant proteins SP-D-CD40L, Acrp30-CD40L, and SP-D-GITRL. Constructs were inserted into the expression vector pVax1 for use as DNA vaccine adjuvants.

Results: Protein expression was confirmed by Western blot after transient transfection of 293T cells. Both 2-trimer and 4-trimer forms of CD40L were active in a human B cell proliferation assay. Four-trimer GITRL costimulated human CD4+ T cell proliferation, and abrogated the immunosuppressive effects of human CD4+CD25+ T cells (Tregs).

Conclusions: These multimeric TNF superfamily ligand constructs were potent immunostimulators and their in vitro activity was consistent with previous work on SP-D-CD40L and SP-D-GITRL activity in mouse and human studies. These novel molecular adjuvants provide new tools for vaccine development in the macaque SIV vaccine model system.

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Monday, November 27, 2006 – 11:30 a.m.

Mobilizing Knowledge for Health Promotion

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FACILITATING COMMUNITY-BASED RESEARCH IN ONTARIO'S HIV SECTOR: IDENTIFYING CHALLENGES FOR AIDS SERVICE ORGANIZATIONS

Robb Travers¹; Sarah Flicker³; Shelley Cleverly²; Tarik Bereket¹; Anna van der Meulen¹; Mike Wilson¹; Colleen McKay¹; Adrian Guta¹; Melisa Dickie^{1,4}; Danielle Schirmer^{1,4}; Jason Globerman¹;

1-Ontario HIV Treatment Network; 2-Ontario AIDS Network; 3-York University; 4-University of Toronto

Plain Language Summary: Ontario's community-based AIDS service organizations (ASOs) are increasingly being asked to partner in community-based research initiatives. However, little is understood about their desire to do so, and the issues which impede or facilitate their participation. This presentation will draw on data from a mixed methods study that explored the experiences of Ontario ASOs with CBR.

Objectives: To better understand the challenges faced by ASOs in relation to CBR, including barriers and facilitating factors.

Methods: In May 2006, we conducted an online survey entitled "Facilitating Community-Based Research in Ontario's HIV Sector." The survey was sent to 51 Executive Directors (EDs) and Program Managers in ASOs with a 75% response rate (n=38). A qualitative follow-up component was recently conducted with 20 EDs and 6 Research Coordinators, providing a deeper understanding of the complexities of our quantitative findings. In both study phases, we sought to understand general experiences with CBR, barriers to ASO and PHA engagement as CBR partners, and factors which facilitate greater community engagement. Quantitative data were managed through an on-line survey program (Survey Monkey) and qualitative interviews were transcribed and thematically coded using the qualitative data management software NVivo 7.0.

Results: Both qualitative and quantitative data reveal a complex set of barriers encountered by ASOs engaging in CBR, including: competing demands on staff workload; lack of physical and human resources; scarcity of funding; time consuming nature of CBR; difficulty accessing ethics review; and concern that results will not be acted upon. These challenges were particularly noted by smaller ASOs, ethno-specific ASOs, and those outside of the Greater Toronto Area. Participants suggested key areas to encourage CBR within ASOs, including: (1)Capacity-building initiatives - investment in student practicum initiatives, partnership brokering, community research internships, greater supports from academic researchers and strategies to enhance PHA engagement; (2)Structural resources - more funding opportunities; funding for long-term research initiatives; provision of start-up funds; (3)Information resources - CBR "best practices" toolkit, database of CBR-interested community groups and researchers, and e-learning opportunities.

Conclusions: These data will enhance the ability of Ontario ASOs to participate in CBR if they desire, by allowing the OHTN, the Ontario AIDS Network, and their partners to target and tailor CBR capacity-building initiatives. The results also provide a baseline of the community-based sector's current capacities to engage in CBR and will assist us in monitoring the effect of our efforts over time.

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BUILDING COMMUNITY CAPACITY THROUGH KNOWLEDGE TRANSFER AND EXCHANGE FOR ETHNO-RACIAL COMMUNITIES ON HIV/AIDS

Keith Wong¹; Victor Inigo^{1,2}; Amutha Samgam^{1,2}; Devica Hintzen^{1,2}; Claudette Samuels¹; Henry Luyombya^{1,2}; Alan Li^{1,2}; Josephine Wong^{1,3};
1-Ethnoracial Treatment Support Network, Toronto, Canada; 2-Committee for Accessible AIDS Treatment, Toronto, Canada; 3-Department of Public Health, Toronto, Canada;

Plain Language Summary: Ethnoracial PHAs face barriers in their participation at traditional academic/scientific-focused conferences. The Ethnoracial Treatment Support Network (ETSN) undertakes responsive capacity building initiatives to facilitate these peers to become effective agents of KTE at the IAC 2006. This presentation will highlight the models we used, the results and lessons learned from the development of these skill-building initiatives.

Objectives: Many PHAs, community and volunteer service providers from the ethno-racial communities, although resourceful in their living and serving experiences, often lack the skills and confidence to transfer their knowledge to broader sectors at major academic conferences. Ethnoracial Treatment Support Network (ETSN), a partnership network dedicated to ethnoracial PHAs' empowerment, conducted a series of capacity building activities to facilitate the peer treatment counsellors and staff/volunteers of network agencies to showcase their work and experiences at the 2006 International AIDS Conference in Toronto.

Methods: Through a series of organized skills development activities and mentorship support activities, such as abstract submission, presentation preparation, public speaking skills and advocacy issues, the ETSN helped peer treatment counsellors and staff/volunteers of network agencies to effectively implement knowledge transfer activities. Background evaluation activities are also conducted to document the barriers, lessons learned and best practices through the mentorship activities and conference preparation process.

Results: Through innovative peer driven learning and mentorship support training activities, the ETSN peer treatment counsellors submitted a total of 9 abstracts, posters and skill building workshops to the IAC and they were all accepted. The peers engaged in intensive peer supported learning and successfully presented their work in a variety of settings including oral presentations, poster development, group based learning and knowledge dissemination. Important models were developed and lessons learned on how best to engage positive peers in KTE activities.

Conclusions: With appropriate resources skill development and mentorship support, ethnoracial PHAs and community volunteers can become important and effective agents for knowledge transfer activities across different sectors at major academic conferences. Ongoing support and empowerment initiatives are keys in enabling the actualization of the Greater Involvement of People with AIDS amongst marginalized communities.

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CAPACITY-BUILDING AS A COMPONENT OF ABORIGINAL COMMUNITY-BASED HIV/AIDS RESEARCH

Renee Masching¹; Randy Jackson¹; Jann Ticknor¹; Linda Archibald²;
1-Canadian Aboriginal AIDS Network, Ottawa, ON; 2-Archibald Consulting;

Plain Language Summary: The Canadian Aboriginal AIDS Network (CAAN) has invested in Aboriginal community-based HIV/AIDS research (CBR) capacity building for six years. Evaluation of capacity building efforts indicates high levels of satisfaction from participants, successful outcomes and some ongoing challenges. This presentation explores the CAAN Research Unit's experiences and ideas for future capacity building activities.

Objectives: CAAN's capacity-building initiatives to build and sustain community engagement in CBR over the past six years have yielded significant successes and identified challenges. This presentation will focus on presenting the results of the evaluations of CAAN's capacity-building as well as the reflections of the CAAN Research Unit staff.

Methods: In 2005 an integrated evaluation process collected data using AGM participant evaluation forms, member telephone surveys, key informant interviews, evaluator observation and document review. Additional evaluations of specific projects such as the Summer Training Award student support program involved questionnaires, telephone surveys and monitoring the implementation of recommendations from previous years. Reflections from CAAN staff highlight responding to the challenges of capacity-building and how to engage with academic investigators, individual and organizational membership given cultural, structural, and geographic obstacles.

Results: Evaluation indicates increasing internal capacity drawn from successful experiences regarding CBR capacity-building across Canada. Specific highlights include: research, especially CBR, is recognized as a real strength; CAAN's research processes are participatory; and all CAAN projects include some degree of capacity-building through the involvement of APHAs and AASOs on advisory and steering committees. CAAN staff are aware that Aboriginal CBR capacity-building must respond to historical experiences with research, which resulted in significant damage. Creative approaches are required that also address the diversity within the Aboriginal population, the often limited infrastructure within Aboriginal AIDS organizations and the broad geographic distribution of Aboriginal communities from sea-to-sea-to-sea. Staff members have identified responses such as: development of step-by-step guidelines for proposal submissions; and incorporating CBR capacity building within existing programs.

Conclusions: Community-based research is crucial in a refined response to the HIV epidemic within the Aboriginal population in Canada. CAAN's Research Unit promotes a vision for capacity building that has grown from the evolution of OUR internal capacity by engaging with community members and academics to conduct meaningful and timely research projects. New capacity-building approaches using technology to bridge the challenges related to cross country work will build upon our successes to meet the diverse needs of Aboriginal communities in Canada.

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THE TORONTO TEEN SURVEY (PHASE ONE): A YOUTH-DESIGNED TOOL TO GENERATE SEXUAL HEALTH PROGRAMMING FOR A DIVERSE URBAN CENTRE

Susan Flynn⁵; Sarah Flicker²; June Larkin¹; Jason Pole³; Robb Travers⁴; Crystal Layne⁵;
5-Planned Parenthood; 1-Undergraduate Women's Studies, Equity Studies, University of Toronto; 2-Faculty of Environmental Sciences, York University; 3-Department of Public Health Sciences, University of Toronto; 4-The Ontario HIV Treatment Network;

Plain Language Summary: The Toronto Teen Survey (TTS) is a community-based research (CBR) project designed to support a comprehensive youth sexual health strategy for one of the world's most ethno-racially diverse cities. Phase One, discussed here, focused on developing a research partnership between youth, academics, service providers, and policy-makers, and engaging a diverse group of youth in the development of the TTS survey tool. The survey captures services currently used by youth as well as access barriers and facilitators.

Objectives: To share experiences, challenges and learnings from the engagement of youth and the community in the survey tool development phase of this CBR project. In addition this abstract focuses on how the social determinants of health and health inequities were recognized and acknowledged in this process, how socio-cultural and political contexts were considered, and how the development of the survey tool itself presented opportunities to address inequities.

Methods: A CBR model was used to engage teens in finding solutions to barriers they experience in accessing non-judgemental and relevant sexual and reproductive health services. A diverse group of youth (n = 12, aged 13-17) worked collaboratively with the research team to develop a research design, instruments and protocol. The tool was subsequently sent out to a broad spectrum of community service providers for a "diversity audit" and pilot tested with additional groups of youth.

Results: Youth identified significant shortcomings in conventional survey design. In particular, several challenges emerged with respect to the complexity of youths' lived experience of sex, gender, race, ethnicity, ability and definitions of sex. Tensions arose between creating a tool which was sensitive to the issues and language of specific youth communities and also accessible to all youth who completed it. Demonstrating the strength of partnership-oriented research, creative solutions emerged – including adding explanation 'bubbles' to the survey, utilizing peer-administration, and the addition of qualitative components.

Conclusions: The findings have the potential to increase access to sexual and reproductive health services for diverse youth communities. The fact that sexual health is intricately linked to larger socio-cultural and political contexts which must be considered in research has posed some challenging dilemmas for the partnership in the process of working with youth to develop the tool. A progressive survey tool such as TTS has the potential to provide more trustworthy and meaningful data if the limitations are worked through with all members of the partnership, including youth participants. Using a community-based approach has enriched the process, and hopefully the outcomes.

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IMPACT OF HOUSING STATUS, SATISFACTION WITH HOUSING SITUATION AND HOUSING INSTABILITY ON HEALTH RELATED QUALITY OF LIFE IN HIV/AIDS

Ruthann Tucker¹; Saara Greene²; Dale Guenter³; Jay Koornstra⁴; Michael Sobota⁵; LaVerne Monette⁶; Lea Narciso⁷; Steve Byers⁸; James Dunn⁹; Stephen Hwang⁹; D. Hintzen¹¹; James Watson¹¹; Jim Truax¹¹; Michael Hamilton¹¹; Marie Kayitesi¹¹; Pius J. White¹¹; Amrita Ahluwalia¹; Sean B. Rourke^{9,10};

1-Fife House; 2-York University School of Social Work; 3-CLEAR Unit; McMaster University; 4-Bruce House, Ottawa; 5-AIDS Thunder Bay; 6-Ontario Aboriginal HIV/AIDS Strategy; 7-Ontario AIDS Network; 8-AIDS Niagara; 9-Centre for Research on Inner City Health; St. Michael's Hospital; University of Toronto; 10-Ontario HIV Treatment Network; 11-Positive Spaces Healthy Places;

Objectives: This is the first longitudinal community-based research (CBR) initiative in Canada to examine housing status and stability and its relationship to health outcomes and health related quality of life in the context of HIV and AIDS. A total of 600 face-to-face surveys with people living with HIV and AIDS from across Ontario are being collected at baseline and one year later to examine: (a) the housing status of people living with HIV in Ontario; (b) the range of housing and supportive housing options available across Ontario, including those provided by community-based health and social service organizations and other housing agencies; (c) variations in the housing and/or homelessness experiences of people with HIV from specific communities, including aboriginal communities, ethnocultural communities, women, families, sexual minorities, youth and ex-prisoners; and (d) the kind of housing options desired or required by people with HIV that will ensure access to, and utilization of, health care, treatment and social services for optimal health.

Methods: As part of our ongoing "Positive Spaces, Healthy Places" Study, 565 people living with HIV/AIDS from Ontario completed a 90-minute face-to-face survey which included questions about sociodemographic, housing and health status, substance use (AUDIT and DAST-20), depression (CES-D), and health-related quality of life (HRQOL; 35-item MOS-HIV). Sample characteristics: Mean age = 43 yrs; 78% male; 58% identified as gay, 34% as heterosexual; 8% bisexual; 49% endorsed having an AIDS diagnosis; 75% were on antiretroviral therapy; 21% were working; education (44% completed high school or less); 13% identified as being Aboriginal; median income per month was \$ 1,494 CAN; and geographic recruitment in Ontario: Greater Toronto area, n=359; East, n=93; Central/Southwest, n=90; Northern Ontario, n=23. Participants were grouped into 3 housing groups for analyses: (1) housed with support services (n=83); (2) housed without support services (n=452); and (3) unstable housing (n=27).

Results: People living HIV with unstable housing had lower quality of life, were younger, had less people with an AIDS diagnosis, had higher percentage of people who identified as heterosexual and who were from an Aboriginal group, and had higher rates of harmful alcohol, substance use, and prior history of been incarcerated. Feeling of "belonging in one's neighbourhood" and that "one's home provides a good location of where to live" were significantly and positively related to virtually all HRQOL dimensions. Number of times moved in the past year, as well as uncertainty about ability to meet monthly housing costs, had significant and negative effects on both physical and mental HRQOL.

Conclusions: Housing status, perceived quality of household and neighbourhood characteristics and housing instability are significantly related to health-related quality of life in HIV/AIDS. Our ongoing prospective study is expected to shed light on the development and critical determinants of these relationships. Funding for the PSHP study provided by CIHR, OHTN, Wellesley Institute and the AIDS Bureau.

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EXPERIENCES OF HOUSING DISCRIMINATION AND THEIR IMPACT ON HEALTH RELATED QUALITY OF LIFE IN HIV/AIDS

Michael Sobota¹; Ruthann Tucker²; Saara Greene³; Dale Guenter⁴; Jay Koornstra⁵; LaVerne Monette⁶; Lea Narciso⁷; Steve Byers⁸; James Dunn⁹; Stephen Hwang⁹; D. Hintzen¹¹; James Watson¹¹; Jim Truax¹¹; Michael Hamilton¹¹; Marie Kayitesi¹¹; Pius J. White¹¹; Amrita Ahluwalia²; Sean B. Rourke^{9,10};

1-AIDS Thunder Bay; 2-Fife House; 3-York University School of Social Work; 4-CLEAR Unit; McMaster University; 5-Bruce House, Ottawa; 6-Ontario Aboriginal HIV/AIDS Strategy; 7-Ontario AIDS Network; 8-AIDS Niagara; 9-Centre for Research on Inner City Health, St. Michael's Hospital; University of Toronto; 10-Ontario HIV Treatment Network; 11-Positive Spaces Healthy Places;

Objectives: This is the first longitudinal community-based research (CBR) initiative in Canada to examine housing status and stability and its relationship to health outcomes and health related quality of life in the context of HIV and AIDS. A total of 600 face-to-face surveys with people living with HIV and AIDS from across Ontario are being collected at baseline and one year later to examine: (a) the housing status of people living with HIV in Ontario; (b) the range of housing and supportive housing options available across Ontario, including those provided by community-based health and social service organizations and other housing agencies; (c) variations in the housing and/or homelessness experiences of people with HIV from specific communities, including aboriginal communities, ethnocultural communities, women, families, sexual minorities, youth and ex-prisoners; and (d) the kind of housing options desired or required by people with HIV that will ensure access to, and utilization of, health care, treatment and social services for optimal health.

Methods: As part of our ongoing "Positive Spaces, Healthy Places" (PSHP) Study, 565 people living with HIV/AIDS from Ontario completed a 90-minute face-to-face survey which included questions about sociodemographic, housing and health status, substance use (AUDIT and DAST-20), depression (CES-D), and health-related quality of life (35-item MOS-HIV). Sample characteristics: Mean age = 43 yrs; 78% male; 58% identified as gay, 34% as heterosexual; 8% bisexual; 49% endorsed having an AIDS diagnosis; 75% were on antiretroviral therapy; 21% were working; education (44% completed high school or less); 13% identified as being Aboriginal; median income per month was \$ 1,494 CAN; and geographic recruitment in Ontario: Greater Toronto area (GTA), n=359; East, n=93; Central/Southwest, n=90; Northern Ontario, n=23.

Results: (1) At baseline, 35% of people living with HIV in Ontario reported a history of experiencing discrimination in securing housing. This varied significantly according to geography with the lowest rate in the GTA (30%) and the highest rate in Eastern Ontario (50%). The reasons endorsed for this discrimination varied as well geographically: (a) discrimination due to HIV status was highest in Eastern and Northern Ontario and this was twice as high than in the GTA; and (b) discrimination due to work status and income level was highest in Eastern Ontario (endorsed by 24% and 26%, respectively) and this was twice the rate than in the GTA and in the Central and Southwest areas; (2) Those who experienced any discrimination when trying to get housing had significantly lower health-related quality of life in most dimensions; and (3) People living with HIV in Ontario with “unstable housing” had twice the rate of discrimination experience than those who were “housed with support services”. Interestingly, those who were housed but did not have support services were intermediate in their experience of discrimination.

Conclusions: People living with HIV in Ontario experience a high rate of discrimination in trying to get housing; this discrimination and the reasons attributed vary significantly by geography. Experiences of discrimination are associated with lower health-related quality of life in people living with HIV. The availability of housing support services may offer some protection from the experiences of discrimination. Funding for PSHP was provided by CIHR, OHTN, Wellesley Institute and the AIDS Bureau.

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GETTING A HANDLE ON HOUSING FOR PHAS IN ONTARIO

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1-University of Toronto, Department of Psychiatry; 2-University of Toronto, Faculty of Social Work; 3-University of Ottawa; 4-Ontario AIDS Network; 5-Centre for Addiction and Mental Health;

Plain Language Summary: Housing Solutions is a project, funded through the OHTN, to develop system level recommendations for housing services and supports for PHAs in Ontario. It will provide details on the components of an appropriate housing system and will identify gaps in those services and supports that currently comprise the field. Working with the Project Team is a broad-based Provincial Knowledge Exchange Group whose members are drawn from HIV/AIDS specific organizations, the PHA community, government and the social and mental health housing sectors. Featured in this presentation will be preliminary data from the provincial survey, key informant interviews and focus groups. The format will be interactive to elicit feedback from the audience on the information’s interpretation and meaning.

Objectives: 1. To identify principles and values to guide the development of appropriate housing and support services for PHAs in Ontario. 2. To identify the range and types of housing and housing support services available to PHAs living in Ontario. 3. To identify gaps in and barriers to housing and housing support services to PHAs in Ontario.

Methods: 1. Electronic survey of HIV/AIDS specific housing services/supports and key informant interviews from selected sample of broader housing sector and housing policy representatives. 3. Literature scan 4. Provincial focus groups. Knowledge Exchange Methods: 1. Provincial Knowledge Exchange Group 2. Provincial workshop to review findings and recommendations.

Results: Initial information collection phase is in progress with the expectation of preliminary results to be ready for presentation at Research Day.

Conclusions: To be determined

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Monday, November 27, 2006 – 2:00 p.m.

Women's and Children's Issues

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WOMEN AS A SPECIFIC VULNERABLE POPULATION? A COMMUNITY RESPONDS

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1-HIV Prevention Research Team, Department of Epidemiology and Community Medicine, University of Ottawa, Canada.; 2-The 519, Toronto, Canada.; 3-Asian Community AIDS Services, Toronto, Canada.; 4-Voices of Positive Women, Toronto, Canada.;

Plain Language Summary: Women are often considered as a population at risk of acquiring HIV - a term which may imply that all women experience the same risks of acquiring HIV infection. Findings from four community consultations suggest that while women face similar challenges to other women in keeping themselves safe from HIV infection, these challenges are experienced differently by, for example, women who inject drugs and by Aboriginal women. Taking account of these different lived experiences - rather than considering women as a group - may be more useful in designing and implementing HIV prevention programs.

Objectives: The document, "Leading Together", details six key strategies to get ahead of the HIV epidemic. One of these strategies is to step up targeted prevention programs for those communities most vulnerable to HIV. The communities are listed as discrete entities and include: gay men, people who use injection drugs, Aboriginal people, people from countries where HIV is endemic, people in correctional facilities, women, at risk youth and people living with HIV. The objective of this paper is to review the findings from a series of community consultations with diverse groups of women to investigate the concept of women as a discrete community vulnerable to HIV.

Methods: As part of the development phase of the Ontario Women's Study, four community consultation sessions were held to discuss HIV prevention barriers for Ontario women and the challenges faced by their service providers. Over one hundred women - community members, service providers from over 30 different agencies in Ontario, researchers and policy makers - attended the four sessions and participated in presentations and discussions on the prevention needs of women from Africa and the Caribbean, Aboriginal women, Spanish-speaking women, Portuguese-speaking women, women from Northern Ontario and women in rural areas, women who inject drugs, women in correctional facilities, women from Asia, women from South Asia, younger women, women street youth, women who have sex with women, women sex workers and transwomen. Thematic analysis was undertaken of the recording of the presentations and subsequent discussion.

Results: Identified barriers to effective HIV prevention included lack of accessible HIV prevention information and misinformation, stigma and discrimination, social pressures, inadequate health and social services, abuse, concerns about HIV testing and difficulties in negotiating safer sex. While the issues identified converged on similar themes, the lived experience of these issues varied according to the specific situations of the women. For example, inadequate health care found expression for women from Northern areas in an extreme shortage of doctors and services, for Aboriginal women in physicians having a limited knowledge of traditional medicines and for Spanish-speaking women in a lack of Spanish-speaking physicians or the use of interpreters from their own community.

Conclusions: The HIV prevention challenges experienced by women converge on similar themes but are variable in their expression, moderated by personal and specific lived experiences. Taking account of these different experiences may be more meaningful in driving prevention programming than considering women as a discrete homogenous vulnerable community.

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CHILD SEXUAL ABUSE AS A PREDICTOR OF ADOLESCENT SEXUAL RISK BEHAVIOUR AMONG FEMALE YOUTH IN THE CANADIAN CHILD WELFARE SYSTEM

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1-Psychology Department, York University; 2-Faculty of Education, University of Western Ontario;

Plain Language Summary: Adolescents in the Canadian child welfare system frequently have histories of multiple forms of maltreatment, including childhood sexual abuse (CSA) (Chernorff et al., 1994). Experiencing CSA is associated with multiple adverse psychosocial and health consequences that persist beyond the duration of the abuse (Felzen-Johnson, 2004). Adolescents with a history of CSA often engage in higher rates of risky sexual practices compared to their non-abused peers (Arriola, Loudon, Doldren, & Fortenberry, 2005). Additionally, there is evidence that the consequences of CSA may be more detrimental for females (e.g., Meston et al., 1999). However, the sexual health consequences of CSA are poorly understood among female youth in the child welfare system.

Objectives: The purpose of the current study was to examine the relationship between experiencing CSA and engaging in sexual risk behaviours in a sample of female adolescents in the Canadian Child Welfare System.

Methods: The sample consisted of 102 female adolescents who were randomly selected from the active caseload of the child welfare agencies in the Greater Toronto Area. Participants ranged in age from 14 to 18. Adolescents reported either presence or absence of CSA, experiencing or not experiencing forced sex in their CSA, and various sexual behaviours. Of the sample, 66.7% (n = 68) reported having engaged in sexual intercourse and thus were included in further analyses.

Results: Among the youth who were sexually active, the average age of first sex was 13.77 (SD = 1.51). In terms of CSA experiences, 36.3% of the sample reported experiencing any CSA and 23.5% of the sample reported experiencing forced sex during CSA. Adolescent females who reported experiencing CSA were more likely to have had sex with an unknown partner in the last 6 months ($\chi^2(1) = 8.25, p = .005$). Moreover, it was also found that females who specifically experienced forced sex during their CSA experiences were more likely to endorse having more than one sexual partner in the last 6 months [$\chi^2(1, n = 9) = 4.44, p = .037$], having sexual intercourse with an unknown partner in the last 6 months [$\chi^2(1, n = 7) = 15.53, p < .001$], ever having had anal sex [$\chi^2(1, n = 8) = 13.52, p = .001$], and earlier age at first sex (M = 13.07, SD = 1.58, p = .004).

Conclusions: Data indicates that experiencing any CSA only predicts sexual intercourse with an unknown partner in the last 6 months. However, experiencing forced sexual intercourse in CSA predicted additional sexual risk behaviours in female adolescents in the Canadian Child Welfare System. These results suggest an added effect of being forced to have sex during CSA above and beyond that of experiencing CSA alone. Child welfare organizations should be aware of this additional risk factor and provide additional guidance (e.g., sexual education, mentoring) to female adolescents in the child welfare system who have experienced forced sex during CSA.

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A RANDOMIZED DOUBLE BLIND PLACEBO CONTROLLED TRIAL OF COMBINED NEVIRAPINE AND ZIDOVUDINE COMPARED TO NEVIRAPINE ALONE IN THE PREVENTION OF PERINATAL TRANSMISSION OF HIV IN ZIMBABWE

Paul Thistle^{1,2,3}; Rachel Spitzer¹; Richard Glazier^{1,4}; Richard Pilon⁵; Gordon Arbess^{1,4}; Andrew Simor¹; Eleanor Boyle⁴; Tsungai Chipato³; Maureen Gottesman^{1,4}; Michael Silverman^{1,2,6};

1-University of Toronto; 2-Howard Hospital, Glendale, Zimbabwe; 3-University of Zimbabwe, Harare; 4-Department of Family and Community Medicine, St Michaels Hospital, Toronto; 5-National HIV and Retrovirology Laboratories, Ottawa; 6-Lakeridge Health Corp, Oshawa;

Plain Language Summary: Adding a short course of peripartum zidovudine did not improve infant outcome, when compared to monotherapy with nevirapine. Poor overall infant and maternal outcomes in both groups, suggest that short course approaches to prevent perinatal transmission of HIV are inadequate.

Objectives: A single dose of nevirapine to both mother and infant (sdNVP) can decrease Mother to Child Transmission (MTCT) of Human Immunodeficiency Virus (HIV) by 47% compared to ultra-short course zidovudine (usZDV). There is limited data about the benefit of usZDV added to sdNVP to prevent MTCT. Also most previous studies failed to fully document, infant and maternal mortality and not just transmission. We performed a double blind, randomized, placebo-controlled trial to determine whether usZDV combined with sdNVP improved neonatal outcome compared with sdNVP alone.

Methods: Mothers were randomized to one of two treatment groups. Group A received ultra-short zidovudine (usZDV) [a loading dose of zidovudine 600mg po and continued doses of zidovudine 300mg po every 3 hours while in labour with their infants receiving ZDV 2mg/kg qid po for 72 hours]. Group B mothers and infants received ZDV placebo dosed in the same manner. All mothers also received single dose nevirapine (sdNVP) [nevirapine 200mg po in labour and nevirapine 2mg/kg po within 72 hours of delivery to the infant].

Results: The study was stopped on the basis of futility, with interim data showing that at present trends, superiority would not be demonstrated. Results at 6 weeks of age were available for 609 infants. The primary endpoint of HIV RNA positivity, or death occurred in 21.8% in the usZDV/sdNVP arm and 23.6% in the infants in the sdNVP arm, maternal mortality was 1.7% and 2.3% respectively.

Conclusions: usZDV when added to a standard 2-dose regimen of sdNVP, did not demonstrate a clinically important decrease in the combined endpoint of MTCT or infant death. High rates of adverse maternal and infant outcome in both arms suggest that improved approaches are necessary.

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HIV NEUTRALIZING IGA IN THE GENITAL TRACT OF HIGH-RISK KENYAN SEX WORKERS IS PROSPECTIVELY ASSOCIATED WITH PROTECTION AGAINST SEXUAL ACQUISITION OF HIV

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1-Department of Medicine, University of Toronto, ON; 2-University of Nairobi, Nairobi, Kenya; 3-Karolinska Institutet, Solna, Sweden; 4-University of Manitoba, Winnipeg, MB; 5-Leiden University Medical Centre, Netherlands;

Plain Language Summary: Certain groups appear to be relatively resistant to the sexual acquisition of HIV, and understanding the correlates of HIV protection are important for vaccine development. IgA is a type of antibody that is common in the genital tract, and HIV "resistant" sex workers in Kenya may have IgA in the vagina that can neutralize HIV. We decided to examine whether women who had HIV-neutralizing IgA in their genital tract were then subsequently protected against acquiring HIV, and found that this was the case.

Objectives: To examine the association of HIV-neutralizing genital tract IgA with HIV protection in high-risk female sex workers (FSWs) from Nairobi, Kenya.

Methods: A prospective, nested case-control study, performed in a cohort of HIV-uninfected Kenyan FSWs participating in an HIV prevention trial from 1998-2002. Cervico-vaginal lavage samples were collected from all sex workers at the time of study enrolment, and 35 women acquired HIV during the trial. After trial completion, FSWs who acquired HIV (cases) were matched 1:4 with persistently uninfected controls based on study arm, sexual risk taking and time of cohort enrolment. The ability of purified cervico-vaginal IgA at study enrolment to neutralize clade A and C primary HIV isolates was assayed blindly, using a pre-established protocol. Associations of HIV acquisition and neutralizing IgA were assessed in a simple matched case-control format, using either Mantel-Haenszel (dichotomous variables) or conditional logistic regression (continuous variables).

Results: The study cohort comprised 113 FSWs: 24 cases who acquired HIV, and 89 matched controls. Samples were not available for all sex workers acquiring HIV, due to the destruction of one sample shipment in transit. Clade A and clade C HIV neutralizing IgA were common at enrolment (31/113, 27%; 70/113, 62%; respectively), and each was independently associated with protection against HIV acquisition (Mantel Haenszel Odds Ratios=0.08 and 0.3 respectively; both P=0.02). HSV-2 infection was associated with HIV acquisition and with reduced frequency of neutralizing IgA.

Conclusions: HIV-neutralizing IgA in the genital tract of high-risk Kenyan FSWs, as assayed by blinded investigators using a pre-defined protocol, was associated with subsequent protection against sexual HIV acquisition. The induction of HIV-neutralizing mucosal IgA may be an important goal for HIV vaccines.

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Monday, November 27, 2006 – 2:00 p.m.

Stigma and Discrimination as a Determinant of Health

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AN INTRODUCTION TO THE TRANS PULSE PROJECT - EXPLORING HIV VULNERABILITY IN ONTARIO'S TRANS COMMUNITIES

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Plain Language Summary: Trans people experience social exclusion through a number of pathways including violence and harassment, obstacles to their maintenance of stable incomes and quality housing, and access barriers to health care and social services. While there has been little research exploring HIV vulnerability in Ontario's trans communities, other North American jurisdictions indicate disproportionately high rates of HIV in trans populations, with prevalence rates ranging from 11 to over 70 percent. The Trans PULSE Project is a CBR initiative employing mixed-methods to create a detailed picture of the health of Ontario's trans communities, enabling an effective exploration of how social exclusion mediates HIV vulnerability, in particular through looking at income instability, housing difficulties, emotional challenges and barriers to health and social services. This research approach is unique as most studies focus on behavioural risk factors rather than the social context of HIV vulnerability. The project involves a partnership between trans community members, The University of Western Ontario, OHTN, The 519 Community Centre, The Sherbourne Health Centre, and TGStation.com. Community soundings across the province have already been carried out, providing foundational information that will inform subsequent phases of the research project including the use of respondent-driven sampling to access diverse social networks of trans people. The Project will create a detailed picture of trans health and vulnerability using a wider-than-ever sampled population of trans people in Ontario.

Objectives: This presentation will: show the importance of using a social determinants of health lens when trying to understand HIV vulnerability in marginalized communities by forefronting the experiences and outcomes of social exclusion in Ontario's trans communities; provide participants with an overview of the existing knowledge about health and HIV vulnerability in Ontario's trans communities; highlight the importance of using community-based research methods when working with hidden, hard-to-reach communities; provide an overview of the Trans PULSE Project to date, including the process of establishing an effective community-based research collaborative, findings from community soundings with trans people and providers, as well as the future steps to be taken by the PULSE Project including the use and design of respondent driven sampling to reach >1000 trans people across Ontario.

Methods: The presentation will bring together community and academic researchers to discuss the experience of research process and design, including the community soundings (focus groups) and respondent driven sampling.

Results: Qualitative data from the community soundings will be presented and it will be shown how this informed the development of the next phase of the research project.

Conclusions: The importance of using CBR principles, to engage community members and to make the research relevant to community interests and objectives, will be stressed.

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RACISM AND HIV/AIDS: IMPACTS OF RACIALIZED DISCOURSE ON THE DAILY LIVES OF AFRICAN AND CARIBBEAN COMMUNITIES IN TORONTO

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Plain Language Summary: This qualitative study examined experiences of HIV-related stigma and discrimination among people from African and Caribbean communities living in Toronto. Participants described how HIV is viewed as something that all Black or African people have and described common experiences of being told that HIV comes from Africa. They explain how this has a negative impact on their ability to access HIV/AIDS services and health care in general, and contributes overall to racism in Canada. Policies and responses to HIV/AIDS need to consider how this contributes to stigma, denial, fear and discrimination, making it difficult for African and Caribbean communities to address HIV/AIDS.

Objectives: Examinations of discourse around race and HIV/AIDS draw attention to the pervasive association of HIV with Black and African bodies in local, national and global contexts. This analysis seeks to understand how these discourses operate at a micro-level in the daily lives of African and Caribbean people and what the implications are for responding to HIV/AIDS in Black communities in Toronto.

Methods: Qualitative interviews and focus groups were conducted with 57 women and 47 men from three African (Ethiopian, Kenyan, Somali) and three Caribbean (Guyanese, Jamaican, Trinidadian) communities in Toronto. Participants were recruited through ASOs, health centres, community organizations and word-of-mouth. Semi-structured interviews were conducted with 30 HIV positive participants, and twelve focus groups were held with 74 community members of negative or unknown HIV status. These were audio-recorded, transcribed and analyzed for themes involving stigma, denial, discrimination and fear.

Results: Participants indicate that HIV stigma affects Black and African people regardless of individual serostatus; all are viewed as carriers of disease in general and HIV/AIDS in particular. This is evident in the media, in public health campaigns, in the provision of health care and in immigration policy. Participants describe negative effects of this discourse, including hesitance in seeking medical care, HIV positive people avoiding support services, and difficulty discussing HIV within communities because people feel stigmatized as the source of the disease.

Conclusions: Representations and discourse around race and HIV/AIDS filter into the daily lives of African and Caribbean people and resonate with experiences of racism, colonialism and lack of access to resources. Education, policy and institutional practices responding to HIV cannot neglect the ways in which they may perpetuate systems of inequality, furthering HIV stigma. Institutional practices and policies need to be informed by the lived experiences of African and Caribbean people and their critiques of dominant discourses.

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“HOMOPHOBIA IS KILLING US”: CONSTRUCTING GAY OPPRESSION AS A DETERMINANT OF HEALTH

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Plain Language Summary: One of the major achievements of LGBT scholarship has been to shift the focus of LGBT health research from ‘homosexuality as disease’ to ‘gay oppression as a determinant of health’. Where once the health sciences concentrated their efforts on ‘curing’ homosexuality, they are now largely concerned with establishing anti-gay discrimination as the cause of a range of gay men’s health concerns, such as, depression, substance abuse, and, as I will discuss here, HIV/AIDS. Through an analysis of the gay men’s health literature, I identify and discuss the social and political implications of the construction of gay oppression, the ways in which gay oppression is linked to HIV/AIDS, and the types of interventions these constructions promote.

Objectives: To explore how gay oppression is constructed as a determinant of HIV/AIDS. To identify the ideological and political ramifications of these constructions.

Methods: My analysis is informed by social constructionism and utilises the methodological approach known as discursive analysis. Discursive analysis takes discourse, not as a route or resource to some reality, but as topics of study on their own right. From this perspective, I treat the gay men’s health literature as data and analyse it for recurrent constructions of gay oppression as a determinant of health

Results: Three themes emerged from the data: (1) Gay oppression is constructed in psychological terms, (2) ‘internalised homophobia’ is foreground as the cause for HIV transmission, and (3) individualised forms of HIV prevention are promoted.

Conclusions: As we articulate gay oppression as a determinant of gay men’s health, it is important to think through in some detail just what is meant by the terms we use and their consequences. While individualised constructions of gay oppression can be helpful in offering direction for the (individual) health care of gay men, such constructions have their costs. Focussing HIV research and prevention on internalised homophobia serves to maintain the locus of intervention squarely on gay men. This individualistic approach to health serves to obscure the social forces that shape and constrain health.

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HIV-RELATED RISK AMONG TORONTO’S EAST AFRICAN IMMIGRANT COMMUNITIES: PERCEPTION AND BEHAVIOUR

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Plain Language Summary: Women and men who immigrate to Toronto from countries where HIV is endemic represent an important part of the Canadian epidemic and prevention efforts need to reflect risk as it occurs in these communities. This analysis from the East African Health Study in Toronto (EAST) indicates that there is potential for HIV transmission to occur in Canada based on sexual behaviour, origin of sexual partners, inconsistent condom use, and other HIV-related risk.

Objectives: To present data from the East African Health Study in Toronto (EAST) concerning HIV-related risk in Ethiopian, Kenyan, Somali, Tanzanian, and Ugandan communities.

Methods: As part of an ongoing study, interviews were conducted with 359 East Africans living in Toronto. Participants were recruited from pre-existing community group lists and recruitment outreach efforts. Univariate analysis was used to describe the perception of risk, risk behaviour, characteristics of partners, and other risks associated with HIV transmission.

Results: 74% of the study population felt they had little or no risk of acquiring HIV. 24% didn’t know if, and 8% didn’t believe, that HIV is a problem in their community. 69% reported having a regular sexual partner; most of those partners were of African (84%) or Caribbean (4%) origin and 13% were living in sub-Saharan Africa. 75% reported sexual intercourse in the past year, with 17% of those reporting concurrent sex partners. Single participants more likely to have concurrent sex partners (28% vs 7% p<=0.001). 42% of those who had sex in the past year reported never using condoms and a further 28% reported inconsistent condom use. No participants reported ever injecting drugs. 6% had blood transfusions, 3% scarification marks, 4% tattoos, and 30% surgery. Of these, 73%, 100%, 21%, and 46% respectively took place in Africa. 18% of women and 69% of men were circumcised in Africa. 45% of the population traveled to sub-Saharan Africa since arriving in Canada.

Conclusions: Although perception of individual risk was extremely low, there is potential for HIV transmission to occur in Canada because of risk relating to concurrent sexual relationships, inconsistent condom use, and relationships with partners from, or in, countries where HIV is endemic. A small but significant proportion of participants had procedures that could be potential modes of transmission based on location where the procedure was conducted (blood transfusions, scarification, surgery, and circumcision). With the continual increase in HIV diagnoses among these communities, risk-related data are crucial for tailoring Canadian prevention initiatives.

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Monday, November 27, 2006 – 2:00 p.m.

Exploring World Issues

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THE REFUGE HOUSE: A COMMUNITY'S RESPONSE TO CARING FOR CHILDREN LIVING WITH HIV IN BRAZIL

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Plain Language Summary: Care of HIV positive children is becoming an increasing priority as many are orphaned or abandoned with little or no access to conventional forms of support. The Refuge House, a non governmental orphanage in Brazil, combines community efforts and international collaboration to create a model of care that cultivates personal development and a sense of belonging. Their three-tiered approach to care seeks family reconciliation and adoption as primary and secondary objectives. Failing this, the child is accepted into the Refuge House where volunteers provide care that addresses the broader social and cultural challenges of living with HIV as well as the medical challenges of treating HIV infection.

Objectives: Care of HIV positive children is becoming an increasing priority as many are orphaned or abandoned with little or no access to care and support. Currently, there are a range of initiatives that seek to address the needs of HIV positive children. This research explores the model of care developed by the Refuge House in Belo Horizonte, Brazil. The Refuge House is an orphanage for HIV positive children established in 1993 by the faith-based organization Youth With A Mission.

Methods: Ethnographic research was conducted over a period of two months in order to provide a detailed description and analysis of the Refuge House. Participant observation, archival research and semi-structured interviews with adult caregivers were used to obtain data. The data was analyzed for emergent themes regarding the model of care used within the orphanage.

Results: The Refuge House is currently home to 18 HIV positive orphaned or abandoned children. The primary objective of the Refuge House is to seek reconciliation for the HIV positive child with their immediate or extended family. When this is not possible, suitable adoption alternatives are explored. Failing this, the child is accepted into the Refuge House. Volunteer staff workers provide a model of care which addresses the broader social and cultural challenges of living with HIV – like social stigma – as well as the medical challenges of treating HIV infection. While effective at meeting the holistic needs of children, this model is dependent upon a high level of volunteer involvement and international support.

Conclusions: Through community based efforts and international collaboration the Refuge House has developed a family-centered model for care of HIV positive children in Brazil who have been orphaned or abandoned. This model challenges the use of orphanages as a last resort by cultivating a sense of belonging and encouraging personal development.

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QUALITY OF LIFE AND DEPRESSION AMONG SOUTH ASIAN PEOPLE WITH HIV/AIDS IN URBAN TORONTO, ONTARIO

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Plain Language Summary: The South Asian community constitutes the second largest visible minority group in the Greater Toronto Area. However, there is little information available on how to address their prevention education needs. The current pilot study explored the physical, mental and emotional health of People Living with HIV/AIDS living in an urban community of greater Toronto area, Ontario.

Objectives: This pilot study was conducted in order to determine (a) is the quality of life comparable between people with and without HIV/AIDS, in an urban, South Asian community in greater Toronto? and (b) is the depression index comparable between people with and without HIV/AIDS, in an urban, South Asian community in greater Toronto?

Methods: Two groups of participants were recruited from the South Asian community: 30 Persons Living with HIV/AIDS (Group One) and 51 individuals who were either HIV- or had not been tested for HIV (Group Two) (Total N=81). Two trained interviewers administered questionnaires, which took approximately 1-1.5 hours to complete.

Results: Although no statistically significant differences were found between Group One and Group Two on depression index scores, these scores were high among the study population, indicating a clinically significant level of psychological distress. Through qualitative analysis, depression emerged as a theme with Group One participants identifying more barriers in their life than Group Two participants. Similarly, Group One scored significantly lower on measures of quality of life than Group Two.

Conclusions: Further research is required to explore the levels of depression found in this study among the South Asian Community using a larger sample size. It is also important that programs targeted to HIV+ South Asian clients address symptoms of depression and aim to increase quality of life.

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SEXUAL RISK FACTORS FOR HIV INFECTION IN AFRICA OVER TIME AND BY LEVEL OF INFECTION: SYSTEMATIC OVERVIEW OF 79 STUDIES IN AFRICA FROM 1986-2003

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Plain Language Summary: This study quantify established sexual risk factors of HIV infection in Africa, such as use of commercial sex by males or being a commercial sex worker by females, higher number of sexual partners, history of HSV-2 or other sexual transmitted infections and male circumcision, and observed if risks changed over time by background rates of infection in the general population or rates of male circumcision.

Objectives: To quantify establish sexual risk factors of HIV infection in Africa; To investigate the variation of risks over time by background rates of infection in the general population or rates of male circumcision.

Methods: A systematic literature review was conducted for studies published up to June 2006 to examine sexual risk factors of HIV infection in Africa. Risk factors included commercial sex (being a female commercial sex worker (CSW) and being a male client), number of sex partners more than 3 in lifetime (MP), herpes simplex type-2 (HSV-2) sero-positive, history of sexually transmitted infection (STI) and male lack of circumcision.

Results: Seventy-nine studies were included (56 studies for female and 33 for male). Summary relative risks (RRs) were calculated by random effect models (being a male client, 1.91[1.52,2.41]; being a female CSW, 2.36[1.6,3.48]; MP for male, 2.4[1.86,3.09]; MP for female, 3.64[2.87,4.62]; HSV-2 for male, 5.61[3.42,9.21]; HSV-2 for female, 4.0[2.89,5.55]; STI for male, 2.87[2.04,4.03]; STI for female, 2.16[1.78,2.63]; male lack of circumcision, 2.47[1.81,3.36]). Meta-analysis also indicated that commercial sex, MP, HSV-2 sero-positive, STI and male lack of circumcision significantly increased the risk of HIV infection for both of high risk and non-high risk populations. Heterogeneity between studies was decreased substantially by sub-population analysis for most of the risk factors.

Conclusions: The systematic review provides strong evidence that commercial sex, MP, HSV-2, STI and male's lack of circumcision were significantly associated with HIV infection. Risk changed a little over time and at different background rates of HIV in the non-high risk groups. Our study reinforces the need for prevention programs to reduce risky sex, and strengthens the role of HSV-2 on HIV transmission.

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TRENDS IN HIV-1 IN YOUNG ADULTS IN SOUTH INDIA FROM 2000 TO 2004: A PREVALENCE STUDY

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Plain Language Summary: Major increases in HIV-1 in India have been predicted. Tracking new infections is necessary to understand whether the epidemic is growing or shrinking in India, particularly in the "Southern" states of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu where most infections have been reported. Trends in the proportion of infected young women (age 15-24) attending antenatal clinics (ANC) have been shown to reflect well the trend of new infections in the general population. Our objective in this study was to evaluate trends in HIV infection in young ANC attendees in different age groups and regions of India to evaluate growth of the epidemic.

Objectives: Tracking incident infections is necessary to understand the epidemic's course in India, particularly in the "Southern" states of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu where the epidemic is more advanced. Prevalence among young women (age 15-24) attending antenatal clinics (ANC) has been shown to approximate incidence. Our objective in this study was to evaluate trends in age- and region-specific HIV prevalence

Methods: We analyzed unlinked, anonymous HIV-1 prevalence data from 294,050 women attending 216 ANC clinics and 58,790 men attending 132 sexually-transmitted infection (STI) clinics from 2000-2004. Southern and northern states were analysed separately.

Results: The age-standardized HIV-1 prevalence among women aged 15-24 in Southern states fell from 1.7% to 1.1% from 2000-2004 (relative decline 35%; trend $p < 0.01$, annual decline of 12%), but did not fall significantly at ages 25-34 (relative decline 10%; trend $p = 0.26$). Prevalence in the North was about one-fifth of that in the South with no significant declines from 2000-2004. Declines at young ages in the South were consistent by education, urban/rural and migration sub-groups, and in ANC sites monitored continuously. Prevalence among Southern male STI clinic attendees aged 20-29 fell, including among those with ulcerative STIs, but prevalence declines were more modest in Northern men.

Conclusions: A decline of over one-third in HIV-1 prevalence from 2000-2004 among young women in South India appears to be real, and not easily attributable to selection or testing biases or to mortality. This decline is most plausibly attributable to rising condom use between men and female sex workers in South India, and thus reduced transmission to pregnant women. Expanding peer-based condom programs for sex workers remains a top priority to control HIV-1 growth in India.

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HIV-1 INFECTION UNLEASHES RETROTRANSPOSITION OF ENDOGENOUS ELEMENTS

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Plain Language Summary: A human cell possesses defence mechanisms which have the potential to fight off invasion by viruses such as HIV. HIV possesses counter measures which destroy these defences. It has recently been discovered that some of these defences are important not only in preventing infection with viruses, but also in controlling ancient retrovirus-like elements that are contained in the cells of every human. These elements are usually inactive and thought to be harmless, however the impact of HIV infection on their activity has not been considered. We have found that HIV infection results in unusual activity of these elements. This activity may contribute to disease progression, and therefore holds promise as a new target for therapeutics.

Objectives: Human endogenous retrotransposable elements (HEREs) are actively controlled by host factors. Some of these factors, such as members of the APOBEC3 protein family, also play defensive roles against exogenous retroviruses including HIV-1. Restriction of HIV-1 by APOBEC 3F/3G is prevented by HIV-1-Vif, which induces their degradation. Our objective is to determine whether the ability of HIV-1 to overcome host cellular defenses permits the retrotransposition of HEREs in HIV-1 infected cells. Studying this interaction will result in a better understanding of HIV-1 pathogenesis, and uncover novel targets for therapeutic interventions.

Methods: Transcript expression of HERV-K, LINE-1, and AluSX retroelements was profiled in various cell subsets from human PBMCs by qRT-PCR. Primary CD4+ T cells from blood and lymphoid tissue were infected in vitro with HIV-1. Cells from infection cultures, and mock infection controls, were monitored for HERE transcription, and increases in HERE genome copy numbers which would indicate retrotransposition events. NCBI and Los Alamos sequences databases were searched for unannotated retroelement insertions into HIV-1 genomes.

Results: We found that both LTR (HERV-K) and non-LTR (LINE-1 and AluSX) HERE transcripts were present in resting CD4+ and CD8+ T cells, and monocytes from healthy individuals, and that immune activation resulted in diminished transcript levels. Despite the presence of these transcripts, increases in genomic copy numbers of corresponding elements were not observed. In vitro HIV-1 infection of primary CD4+ T cells resulted in the induction of retrotransposition events, and the progressive accumulation of genomic copies of AluSX, LINE-1, and HERV-K elements. This proliferation was restricted to HIV-1 infected cells. A LINE-1 insertion into a primary isolate proviral HIV-1 clone was discovered in the NCBI database. This sequence contains the following hallmarks of LINE-1 insertional events: flanking direct repeats, an inversion, and a deletion.

Conclusions: While HERV-K, LINE-1, and AluSX transcripts are expressed in healthy ex vivo PBMCs, a post-transcriptional block prevents retrotransposition. In vitro HIV-1 infection results in the retrotransposition of HEREs in infected cells. The discovery of a LINE-1 insertion into a primary isolate HIV-1 sequence demonstrates the co-existence of LINE-1 and HIV-1 retrotransposition activity, and provides evidence for a similar in vivo induction. The association of retrotransposition activity with HIV-1 infection suggests new mechanisms for HIV-1-related pathologies.

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EFFECT OF GP120 AND CYTOKINES ON THE FUNCTIONAL EXPRESSION OF ATP-BINDING CASSETTE (ABC) DRUG EFFLUX TRANSPORTERS IN CULTURED ASTROCYTE

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Plain Language Summary: Drug export pumps such as P-glycoprotein (P-gp) and Multidrug Resistance-Associate Protein-1 (Mrp1) can export anti-HIV drugs from the brain and limit pharmacotherapy of HIV-1 encephalitis (HIVE). The goal of this study is to determine if toxic substances present in the brain during HIVE [i.e., HIV-1 viral envelope protein gp120, cytokines (i.e., TNF- α , IL-1 β , IL-6)] can alter P-gp and Mrp1 levels and activity. We observed that gp120 treatment decreased P-gp but increased Mrp1 levels and activity in astrocytes, a type of brain cell infected by HIV-1. We also showed that P-gp and Mrp1 protein levels were increased by TNF- α while P-gp protein was decreased by IL-6. These results imply that anti-HIV drug entry and distribution in the brain may be altered during HIVE.

Objectives: Brain immunological responses are known to occur during HIV-1 encephalitis (HIVE). Using an in vitro model of HIVE-associated immune responses, we demonstrated that cytokine secretion (IL-6) is mediated by an interaction between gp120 and CXCR4 (i.e., TNF- α - CCR5). An obstacle to HIVE pharmacotherapy is the functional expression of ABC transporters (i.e., P-gp, Mrp1) that export antiretroviral drugs from HIV-1 brain cellular targets (i.e., astrocytes, microglia). At present, the effect of gp120 or cytokine exposure on the expression of ABC transporters remains unclear. The goal of this project was to investigate P-gp and Mrp1 functional expression in cultured rat astrocytes treated with gp120 or cytokines.

Methods: Primary cultures of rat astrocytes were incubated for the desired time in the presence of 1.0 nM gp120 (subtype C, strain 96ZM651) or cytokines (i.e., TNF- α , IL-1 β , IL-6). Gene and protein expression were determined by RT-PCR and immunoblotting analysis respectively. Transport properties of digoxin and 2',7'-bis-(2-carboxyethyl)-5-(and-6)-carboxyfluorescein (BCECF), established P-gp and Mrp1 substrates respectively, as well as HIV-1 protease inhibitors (i.e., saquinavir, ritonavir) were investigated at 37°C.

Results: RT-PCR and immunoblotting analysis demonstrated decreased P-gp mRNA (up to 2.2-fold) and protein expression (4.7-fold) in rat astrocyte cultures treated with gp120 respectively. In contrast, Mrp1 mRNA (2.3-fold) and protein (2.2-fold) expression was increased. Digoxin accumulation was significantly enhanced (1.8-fold) while BCECF cellular retention was significantly reduced (2.0-fold) in gp120 treated astrocytes compared to control, suggesting altered activity of P-gp and Mrp1 respectively. Furthermore, saquinavir and ritonavir accumulation was significantly enhanced in gp120-treated astrocytes, which implies that altered transporter activity may lead to changes in brain permeation and distribution of antiretroviral drugs. Cytokine treatment showed that P-gp and Mrp1 protein expression was while P-gp was significantly decreased by IL-6. increased by TNF-

Conclusions: Gp120 or cytokine treatment can modulate the gene and protein expression of both P-gp and Mrp1 in cultured rat astrocytes. These data suggest that complex drug-transporter interactions may occur during immune responses associated with brain HIV-1 infection.

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INVESTIGATING THE ROLE OF HNRNP AND SR PROTEINS IN THE REGULATION OF HIV-1 GENE EXPRESSION

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Plain Language Summary: Expression and replication of HIV-1 is critically dependent upon the controlled processing of its mRNA. Previously analysis has highlighted the important role that RNA splicing plays in the production of viral proteins and identified several sequences within the virus that play important roles in regulating viral RNA processing. To gain a better understanding of the host factors that regulate HIV-1 RNA processing and expression, we have carried a systemic screen to identify members of the hnRNP and SR protein families that play inhibitory or stimulatory roles in this process. To date, our studies have identified several members of each family whose depletion results in significant alterations in HIV-1 expression. Current effort is directed at understanding the mechanism underlying the observed response.

Objectives: To evaluate the role of individual members of the hnRNP and SR protein families in regulating HIV-1 gene expression, siRNA was used to deplete individual proteins. Cells were subsequently evaluated for alterations in viral RNA splicing and structural protein expression.

Methods: A stable cell containing an HIV-1 provirus expressing GFP fused to Gag was generated. This cell line was subsequently treated with siRNAs to members of the hnRNP or SR protein families and depletion of individual proteins confirmed by Western blot. RNA and protein extracted from control and treated cells were analyzed for changes in viral RNA splicing by RT-PCR and Gag/gp120 expression by Western blot.

Results: Analysis of the hnRNP family of proteins, demonstrated that hnRNP A1, A2, D, DL and H affect viral RNA splicing and to a certain extent Gag/gp120 expression levels. In contrast, hnRNP C1, F and G affect viral Gag/gp120 expression levels without any measurable alteration in viral RNA processing. Analysis of the SR proteins suggests that SRp20, p30 and p40 all affect viral RNA splicing, while SRp20, p40 and SF2/ASF modulate Gag/gp120 expression levels.

Conclusions: We have identified a number of cellular factors that effect HIV protein expression and RNA splicing. We are also looking at the mechanism of action of these factors in an attempt to delve deeper into the complex interactions that occur during HIV RNA processing and expression. Understanding the interactions between the virus and the host cell will identify new avenues to disrupt viral gene expression and control HIV-1 replication.

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INSERTIONAL INACTIVATION OF HIV-1 PROVIRUS DNA: A NOVEL STRATEGY TO INHIBIT VIRUS REPLICATION

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Plain Language Summary: A number of gene therapy strategies have been developed that inhibit HIV replication at the RNA or protein level. However, it may be preferable to interfere at the DNA level since a one-time inactivation might suffice to inhibit virus replication in the gene-modified cells and their progeny. To test this hypothesis, we used a mobile group II intron that can splice out and insert into a specific DNA target site. We modified retargeted introns to target two sites within the integrase domain of HIV-1 pol gene. Following insertion of these introns into an infectious HIV-1 provirus DNA clone, we tested whether intron insertion can inhibit HIV-1 replication in mammalian cells. While these cells are able to produce infectious progeny viruses from a control HIV-1 provirus DNA clone, the progeny viruses produced from the group II intron-inserted HIV-1 provirus DNA clones were not infectious. Therefore, group II intron insertion within the integrase domain of HIV-1 provirus DNA results in inhibition of HIV-1 replication at the level of second round of infection.

Objectives: We have examined whether insertion of a mobile group II intron (LI.LtrB) into infectious HIV-1 provirus DNA could inhibit virus replication.

Methods: We have used introns targeted against two different sites within the integrase coding region of the HIV-1 pol gene. The intron-inserted HIV-1 provirus DNA clones (following intron insertion in *E. coli*) were isolated and tested for virus replication in mammalian cells.

Results: Similar amounts of HIV-1 RNA, protein, and progeny virus were produced from HIV-1 provirus DNA as from intron-inserted HIV-1 provirus DNA. However, when the progeny virus was tested for its infectivity, although the group II intron-inserted HIV-1 RNA was packaged and reverse transcribed, the DNA failed to integrate as expected in the absence of a functional integrase, and virus replication was aborted.

Conclusions: These results demonstrate that group II introns can confer complete inhibition of HIV-1 replication and should be further exploited for HIV-1 gene therapy.

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PRODUCTIVE HIV-1 INFECTION OF CD8+ T-CELLS IS ASSOCIATED WITH THE DOWN-REGULATION OF THE CD8 AND CXCR4 CELL-SURFACE MOLECULES: VIRAL TARGETS FOR RECEPTOR-MEDIATED ENTRY?

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Plain Language Summary: The factors required for HIV infection of CD8+ T-cells have been poorly studied. Our objective was to examine the viral determinants required for entry of the virus in these cells. We found that HIV infection of the cells results in a modulation of two key cellular receptors. These factors may play a role in the increased infectivity and productivity of the virus in the CD8+ T-cell clones that were used in the experiments.

Objectives: 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. We hypothesized that HIV-1 entry into these cells may be facilitated through access to extracellular receptors.

Methods: Cells used in these in vitro studies were isolated from the peripheral blood of healthy volunteers. HIV-1 infection was monitored by both ELISA and flow cytometric analysis. Similarly, receptor analysis was performed by flow cytometry and confirmed by RT-PCR analysis. The CD8+ T-cell clones used in the studies were generated by HTLV-I transformation of peripheral blood-derived CD8+ T-cells from a healthy individual. Differences in measured variables between experimental and control groups were assessed using the Student's t test.

Results: CD8+ T-cells served as suitable targets for productive HIV-1 infection in vitro. CD8+ T-cells were most susceptible to T-cell tropic strains of the virus and infection of the CD8+ T-cells resulted in the up-regulation of the CD28, CD38 and HLA-DR activation markers. Of interest, the CD8+ T-cell clones exhibited HIV-1 production 20-fold greater than CD4+ T-cells. Our research also demonstrated that during the course of infection, there was a decrease in mean expression of the CD8 ($46.0 \pm 3.1\%$, $p < 0.01$, $n=3$) and CXCR4 ($26.8 \pm 11.8\%$, $p < 0.01$, $n=4$) receptors on the surface of the HIV-1 infected CD8+ T-cell clones. Accordingly, the use of antibodies to the CD8 or CXCR4 receptors 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. However, 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 both the CD8 and CXCR4 receptors. 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 infection and replication.

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IL-10 REGULATION BY HIV-TAT IN PRIMARY HUMAN MONOCYtic CELLS: INVOLVEMENT OF CALMODULIN/CALMODULIN-DEPENDENT PROTEIN KINASE-ACTIVATED P38 MAPK AND SP-1 AND CREB-1 TRANSCRIPTION FACTORS

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Plain Language Summary: Human immunodeficiency virus (HIV)-tat plays an important role in virus replication and in various aspects of host immune responses including dysregulation of cytokine production. IL-10, an anti-inflammatory cytokine, is upregulated during the course of HIV infection, representing an important pathway by which HIV may induce immunodeficiency.

Objectives: The specific objectives of this project were: 1) to define the signaling kinases required for tat-induced IL-10 production in primary monocytes, and 2) to identify the transcription factors involved in tat-induced IL-10 transcription in primary monocytes.

Methods: Primary monocytes were isolated from healthy, HIV seronegative donors by negative selection through the use of Rosettsep magnetic bead technology. Monocytes were treated with recombinant HIV tat (HIV AIDS Reference and Reagent Program) for varying periods of time. Cells were examined for IL-10 expression by sandwich-based ELISA. Intracellular kinases were identified by western blotting with phospho-specific antibodies, and transcription factor activation was measured by gel shift assays.

Results: Herein, we show that extracellular tat induced IL-10 expression in normal human monocytes. To understand the signaling pathways underlying HIV-tat-induced IL-10 transcription, we investigated the involvement of mitogen-activated protein kinase (MAPK) as well as calcium signaling and the downstream transcription factor(s). Our results suggest that tat-induced calcium influx regulated IL-10 transcription in monocytic cells. The experiments designed to further understand the molecules involved in the calcium signaling suggested that calmodulin and calmodulin-dependent protein kinase-II (CaMK-II)-activated p38 MAPK played a role in extracellular tat-induced IL-10 expression in primary human monocytes. Furthermore, tat-induced IL-10 expression was regulated by p38 MAPK- and CaMK II-activated cyclic adenosine 3', 5'-monophosphate-responsive element binding-1 (CREB1) as well as Sp-1 transcription factors.

Conclusions: Taken together, our results suggest that extracellular HIV-tat induced IL-10 transcription in primary human monocytes is regulated by CREB1 and Sp-1 transcription factors through the activation of calmodulin / CaMKII-dependent p38 MAPK. This research was supported by funding from the OHTN.

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ANAL CANCER IN ONTARIO, 1971-2002: THE RELATIONSHIP TO SOCIOECONOMIC STATUS, GENDER AND THE HIV EPIDEMIC

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Plain Language Summary: Using the Ontario Cancer Registry, we found that new cases of anal cancer are on the rise in Ontario. Women and those living in low income areas seem to be more affected. Survival was worse in men, older persons and in those diagnosed in the HAART era as compared to the pre-HAART HIV era. Further study is required to determine the underlying reasons for these differences.

Objectives: Epidermoid anal cancer (EAC) may be on the rise, disproportionately affecting certain populations such as women with other HPV-related conditions and persons with HIV. In this population-based study, we examine the incidence and survival from EAC for the entire population of Ontario, Canada.

Methods: Using the Ontario Cancer Registry (OCR), we identified all new cases of EAC diagnosed between 1971-2002. The cohort was divided into 3 eras based on the date of diagnosis, pre HIV (1971-80), HIV (1981-1995) and HAART (1996-2002). Age- and sex-adjusted incidence rates were calculated. Change in incidence over the study period was tested using regression techniques. Survival was assessed using Cox proportional hazards methods, incorporating age at diagnosis, sex, and era and income into the models.

Results: We identified 1706 cases of EAC during the study period, 247 (15%) in the pre-HIV era, 806 (50%) in the HIV era, and 599 (35%) in the HAART era. Women accounted for 66% of the cases ($p < 0.0001$ vs. men). Mean age at diagnosis was 62 years; women were significantly older than men at diagnosis ($p < 0.0001$). More cases lived in low-income areas ($p < 0.0001$). The incidence of EAC rose significantly during the study period ($p < 0.0001$). In 1971, the incidence overall, amongst women and amongst men was 0.30, 0.46, and 0.13 per 100,000, respectively. In 2002, incidence had increased to 1.08 (overall), 1.54 (women) and 0.60 per 100,000 (men). Survival was better in women and younger patients, although there was a significant interaction between age and sex. For each 5 year increase in age at diagnosis, women's survival was 22% worse whereas men's survival was 13% worse. Survival was poorer in the HAART era relative to the HIV era (HR: 1.24, 95% C.I.: 1.05-1.46).

Conclusions: In Ontario, the incidence of EAC rose significantly between 1971-2002, disproportionately affecting women and persons living in low-income areas. The sex distribution of EAC may reflect a higher burden of other HPV-related diseases, higher rates of anal intercourse than previously recognized, or greater susceptibility to EAC amongst women. The poorer survival in those diagnosed in the HAART era may be due to the development of EAC in long-term HIV survivors. Further study of HIV- and sex-related factors of EAC is required to explain our findings.

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RELATIONSHIP BETWEEN CD4+ CELL COUNT AND VIRAL LOAD AS SURROGATE MARKERS: A META-ANALYSIS

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Plain Language Summary: Since 1997, HIV-RNA levels and CD4 cell counts have been widely used by governments, international non-government agencies [INGOs] and drug licensing bodies as evidence of the efficacy of new candidate antiretroviral drugs. Both RNA and CD4+ counts are surrogate markers of clinically important events, including progression to AIDS and death. The decision to use these surrogate markers has been based on a strong understanding of the biological process of HIV/AIDS and evidence of a relationship from early trials of mono and dual nucleoside therapy regimens. In light of new therapeutic options and the changing nature of presentations of the disease, we undertook a large regression analysis of all randomized trials assessing therapy since HAART began. We included 182 trials. Most trials assessed CD4 and Viral Load at 26, 48 and 96 weeks. Combining data at the specific time points, we were unable to demonstrate the predictive nature of surrogate endpoints on important clinical events and death. This was consistent at all time points. Given our findings, and the important limitations to consider in our study, our data should help to reassure patients and physicians that in the current treatment climate, blunted CD4 count recovery does not substantially increase risk for negative outcomes including AIDS or death.

Objectives: Since 1997, HIV-RNA levels and CD4 cell counts have been used by governments and drug licensing bodies as evidence of the efficacy of new candidate antiretroviral drugs. Both RNA and CD4+ counts are surrogate markers of clinically important events, including progression to AIDS and death. The continued reliance on surrogate markers assumes that the relationship between HIV-RNA/CD4+ cell count and the risk of clinical outcomes continues to exist for the newly developed drugs. We aimed to determine the magnitude of effect of change in surrogate markers CD4 and, progression to AIDS and death.

Methods: We conducted a large meta-analysis and regression analysis of all randomized trials (greater than 16 weeks duration and including adults). We extracted data on CD4+ count mean change from baseline at 24, 48, and 96 weeks and the HIV-1 RNA mean change from baseline at 24, 48, and 96 weeks. In order to assess the relationship of effect of CD4+ predicting progression to AIDS/death, we used three different analytical methods, namely fixed effects meta-analysis of odds-ratios, simple linear regression and weighted linear regression.

Results: We included 182 randomized trials. In order to conserve space in this abstract, we present the findings for week 48 results as primary outcomes. Week 48 analyses included more studies than weeks 24 and 96. Combining 16 studies with data available on 19 cohorts randomized, we found a pooled Peto OR of 0.91 (95% CI, 0.64-1.30, I²=0%, P=0.61). Progression to AIDS/death were not predicted ($r^2 = 0.0082$). When we examined the number of AIDS/deaths at 48 weeks among patients with VL <50 copies, we included 22 RCTs with available data on 30 cohorts randomized. We found a pooled Peto OR of 1.13 (95% CI, 0.85-1.50, I²= 0%, P=0.5) and no prediction for AIDS/death ($r^2 = 0.0002$). This was consistent no matter what viral load cut-off was used. This was consistent at 26 and 96 weeks also.

Conclusions: From our analyses, most HAART therapies appear to offer high levels of CD4 and viral load control. Accompanying rates of progression to AIDS/death are very low, and these two factors combine to make it difficult to detect links between the surrogate outcomes and clinical outcomes within clinical trial settings.

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HCV CO-INFECTION PROTECTION AGAINST HIV ANTIRETROVIRAL-RELATED HYPERLIPIDEMIA IS LOST WITH SUCCESSFUL HCV TREATMENT

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Plain Language Summary: HCV infection protects against HIV drug blood lipid changes (i.e. cholesterol and triglyceride). Furthermore, HIV-HCV patients on HIV drugs use less lipid medications than those with only HIV. In HIV-HCV patients who are cured of HCV following HCV drug treatment, lipid levels increase to levels seen in people living only with HIV. These findings are important in selecting HIV medications for those with HIV and HCV. This information may also be important for predicting long-term risk of heart and blood vessel disease.

Objectives: Hyperlipidemia is a recognized complication of HIV antiretroviral therapy. Our work suggests that HCV co-infection may protect against this. The effect of successful HCV antiviral therapy on this phenomenon is unknown and therefore was studied.

Methods: Lipid data of patients receiving antiretroviral therapy and HCV antiviral therapy at The Ottawa Hospital between January 1996 and June 2005 was evaluated using a clinic database. Analysis was conducted by Student t-test and Chi square (SPSS 13.0).

Results: 729 HIV mono-infected and 305 HIV-HCV co-infected subjects attended at least one clinic. Of these, 561 (77%) and 217 (71%), initiated at least one round of HAART, respectively. In these subjects, the mean changes in cholesterol (mmol/L) from baseline to months 6 and 12 were 0.99 and 1.43 in HIV mono-infection, and 0.16 ($p < 0.001$) and 0.01 ($p < 0.01$) in HIV-HCV, respectively. Metabolic complications including hypercholesterolemia resulted in interruption of HAART in HIV mono-infection (7%) but not in those with HIV-HCV ($< 1%$) ($p < 0.001$). 8% of HIV mono-infected and no co-infected subject initiated lipid lower therapy while on their initial course of HAART ($p < 0.001$). 27 subjects initiated interferon-based HCV therapy. Total cholesterol increased by 0.85 mmol/L in HIV-HCV co-infected recipients of interferon-based HCV therapy who achieved a sustained virological response ($n=8$) but did not change in those not achieving this outcome ($n=19$) ($p < 0.03$).

Conclusions: HCV co-infection confers a degree of protection from HAART-related lipid complications. This is lost with successful HCV treatment. The mechanism of HCV lipid perturbation and long-term cardiovascular disease implications of these observations are under evaluation.

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PROTEASE INHIBITORS AND CAROTID ARTERY THICKNESS IN THE CANADIAN HIV VASCULAR STUDY

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Plain Language Summary: Heart disease is an important long-term consequence of combination anti-retroviral (ARV) treatment. We examined the relationship between use of ARVs and carotid artery thickness (a measure of future cardiovascular risk) amongst 294 Canadian HIV-positive subjects. We found that protease inhibitors (PIs) or d4T, but not AZT or non-nucleoside reverse transcriptase inhibitors (NNRTIs), increased artery thickness. Longer duration of use was associated with more abnormalities.

Objectives: Anti-retroviral treatment increases the incidence of future myocardial infarction, but the relative contributions of PIs, d4T, and NNRTIs remain unclear. We examined the independent contributions of these drugs/drug classes to carotid artery thickness, a validated measure of future cardiovascular risk.

Methods: HIV-positive subjects aged 35 years or older, attending university-affiliated clinics in five Canadian centers, were recruited into a prospective study of cardiovascular risk. Subjects undergo yearly high-resolution carotid artery ultrasound, according to a standardized and quality-controlled protocol, for five years. Videotaped images are read by computer-assisted algorithms to determine 12-segment mean maximal intimal medial thickness (IMT). Amongst 294 people analyzed at baseline, we sought an association between carotid IMT and exposure to PIs, d4T, AZT, or NNRTIs, controlling for age, gender, and smoking (model 1), and additionally for total:HDL cholesterol, statin drug use and systolic blood pressure (model 2).

Results: Mean (SD) age was 46.7 (7.9) years; 90.5% were men; and 36.9% were current smokers. Total:HDL cholesterol ratio was 5.2 (1.7), and mean systolic blood pressure 120 (16) mm. Mean Carotid IMT was 0.79 (0.23) mm. 58.5%, 76.5%, 73.5% and 66.7% of subjects had taken d4T, AZT, PIs and NNRTIs, respectively. d4T, AZT, and PIs were each individually associated with greater carotid IMT ($P < 0.05$), but NNRTIs were not ($P=0.59$). In model 1, adjusted for age, gender, and smoking, d4T and PIs remained significantly associated with carotid IMT (beta coefficient=0.023 and 0.030, $P=0.02$ and 0.03, respectively), but AZT was not ($P=0.41$). In this model, duration of d4T or PI use was also associated with increasing carotid IMT. In model 2, which additionally controlled for cholesterol, statin drug use and blood pressure (potential consequences of drug treatment), PI use (but not d4T) remained associated with carotid IMT.

Conclusions: Both d4T and PIs, but not AZT or NNRTIs, increase carotid artery atherosclerosis. This relationship was robust to adjustment for known cardiovascular risk factors, and is likely causal.

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LUNG FUNCTION IN HIV INFECTED SUBJECTS – A PILOT STUDY

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Plain Language Summary: Smoking is much more frequent in PHAs (people living with HIV/AIDS) than in the general population, and there is concern that smoking-associated lung disease may be accelerated in PHAs. We measured PHAs' lung function. While smokers accounted for a high proportion of those at risk for lung disease, we found only minor abnormalities in lung function. We are encouraged that most smokers would like to quit.

Objectives: To look at the effect of smoking on lung function among subjects with HIV.

Methods: In this cross-sectional study, we recruited consecutive consenting adults at the regional HIV clinic at McMaster University. Using a quality-controlled algorithm, we measured FEV1 (forced expiratory volume in one second) and FVC (forced vital capacity) using spirometry (Viasys Flow Screen). We abstracted medical data from the medical chart and collected smoking and respiratory symptom data by self-administrated questionnaire. SPSS 11.5 was used to analyze data.

Results: 36 PHAs underwent spirometry. 23/36 (64%) were men. Mean age 42.8 years, SD 9.8, range 18–59. Median HIV duration 7.4 years, range 0.5-20.6. Median CD4 495, range 60-1090. 22/36 (61%) had viral load < 50. 28/36 were currently on antiretroviral therapy. 18/36 were non-smokers, 5 former smokers and 13 current smokers, 7/13 (54%) were trying to quit. 5/35 had a history of asthma (3 were current smokers). No subject had a history of emphysema. Overall, the mean was FEV1 3.38 liters, SD 0.80, range 1.61 – 5.62. Mean FEV1% (percent of age, gender, height and race-predicted reference values) was 93%, SD 11%, range 73% – 124% (p < 0.001 compared to 100%). 14 of 16 subjects with FEV1% < 90% underwent repeat spirometry after inhalation of salbutamol (ventolin). 2/14 had evidence of current asthma (>12% reversibility). According to GOLD (Global initiative for chronic Obstructive Lung Disease) guidelines, 22/36 (61%) of subjects were at risk of COPD (chronic obstructive pulmonary disease), including 5 non-smokers, 5 former smokers, and 12 current smokers. 2/36 (5.5%) subjects had mild COPD (1 none-smoker, 1 current smoker). No significance was found on FEV1% between non-smokers (mean 91%, SD 11%), former smokers (mean 95%, SD 5%) and current smokers (mean 94%, SD 13%) (p = 0.75).

Conclusions: Subjects with HIV have lower lung function than predicted, and most - particularly smokers - are at risk of future COPD. Progression to COPD is likely to emerge with longer term follow-up, but many smokers are interested in quitting and programmes to facilitate smoking cessation should be encouraged.

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EXPLORING "DISABILITY" FROM THE PERSPECTIVE OF ADULTS LIVING WITH HIV/AIDS: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

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Plain Language Summary: We conducted four focus groups and fifteen interviews with adults living with HIV to develop a framework that describes what "disability" means from the perspective of adults living with HIV. Participants viewed "disability" as multidimensional and variable in nature, with fluctuating periods of wellness and illness. "Disability" included symptoms and/or impairments, difficulty carrying out day-to-day activities, uncertainty that resulted in worrying about the future, and challenges interacting in society. These dimensions should be considered by health providers in clinical practice and when measuring "disability" experienced by people living with HIV.

Objectives: To develop a conceptual framework that describes what "disability" means from the perspective of adults living with HIV.

Methods: We conducted focus groups and interviews with people who experienced an "episode" of illness attributed to HIV. We asked participants to describe their health-related challenges, the physical, social and psychological areas of their life affected, and the impact of these challenges on their health. We used grounded theory techniques to develop a conceptual framework describing the consequences of living with HIV.

Results: We recruited 38 participants (21 men, 16 women, 1 transgendered person) for 4 focus groups and 15 face-to-face interviews. Participants had a median time since HIV diagnosis of 9 years (interquartile range: 5-9); 25 (66%) were taking antiretrovirals and 19 (50%) had a nadir CD4 count <200 cells/mm³. Participants conceptualized "disability" as multidimensional and episodic in nature characterized by unpredictable periods of wellness and illness due to HIV and its associated treatments. Dimensions of "disability" included symptoms/impairments, difficulty carrying out day-to-day activities, uncertainty resulting in worrying about the future, and challenges of social inclusion that may fluctuate on a daily basis and/or over the entire course of living with HIV. "Disability" also may be influenced by factors that exacerbate or alleviate episodes that included: level of support, stigma, living strategies, and aging; and may be "triggered" by momentous events such as receiving an HIV diagnosis, starting or changing antiretroviral medications, experiencing a serious illness, or suffering a loss of others.

Conclusions: "Disability" experienced by adults living with HIV is episodic and multi-dimensional, including symptoms/impairments, difficulty carrying out day-to-day activities, uncertainty resulting in worrying about the future, and challenges of social inclusion. These dimensions should be considered by providers in clinical practice and in the future measurement of "disability" experienced by people living with HIV.

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Tuesday, November 28, 2006 – 2:00 p.m.

Realizing GIPA (Greater Involvement of People with AIDS)

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THE AIDS2006 GLOBAL VILLAGE: AN INNOVATIVE MODEL FOR COMMUNITY KNOWLEDGE TRANSFER AND EXCHANGE

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Plain Language Summary: The Global Village at the International AIDS Conference 2006 was developed as an innovative medium to enable community engagement and knowledge transfer exchange. This presentation will detail the various innovative approaches the Global Village utilizes in its programming to facilitate effective knowledge transfer exchange across sectors.

Objectives: International AIDS conferences have evolved from scientific conferences presenting basic, clinical and epidemiological evidence around HIV to large-scale meetings covering issues relevant to a variety of community stakeholders from non-government organizations, activist groups, and affected communities. At AIDS2004 in Bangkok, the Global Village was created to showcase community issues and be open to both delegates and the public. At AIDS 2006, this model was expanded to include multiple interactive presentations and exhibitions allowing for innovative knowledge transfer and exchange (KTE), capacity building and networking of relevance to community stakeholders.

Methods: This session will present the planning process for the AIDS2006 Global Village, detail the various programme components and share some of the lessons learnt from the organizing process. It will highlight different programme model examples where innovative, non-didactic knowledge transfer took place.

Results: The Global Village at AIDS2006 utilised multiple highly interactive learning formats to facilitate cross sector learning and knowledge exchange. These include 64 sessions held in open session halls that encouraged dialogue and audience participation. Examples included “meet the plenary speakers”, scientific literacy sessions, sessions relevant to youth and many others. There were 20 networking zones organized around various themes where groups from different parts of the world working on similar themes could meet and share best practices. There was a Community Dialogue Space where grassroots organizations could present to each other in an open forum setting and where the Red Ribbon Award recipient groups’ experiences were showcased. Most activities were broadcast on-line through the “Virtual Village” to allow people not there in person to attend but also ask questions and give feedback. All these activities were supplemented by exhibition booths and marketplace display from 154 non-government organizations. Over 1000 exit surveys of conference delegates and general public confirmed this to be a well used space that contributed to delegate’s educational needs.

Conclusions: In contrast to didactic presentations in formal session halls going on in other parts of the conference, the Global Village offered multiple alternative opportunities for KTE among community stakeholders. This format was particularly useful to delegates working in HIV/AIDS from different cultures, with different languages and varying degrees of organizational capacity.

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GIPA PRINCIPLES AT WORK: MAXIMIZING COMMUNITY INVOLVEMENT IN AN ACTION RESEARCH TO IMPROVE MENTAL HEALTH SERVICE ACCESS FOR IMMIGRANTS AND REFUGEES LIVING WITH HIV/AIDS

Alan Li¹; Yin-Yuan Chen¹; Josephine Wong²; Noulmook Sutdhibhasilp³; Fanta Ongoiba⁴; Lena Soje⁵; Consuelo Llanos⁶; Seema Opal⁷; Kenneth Fung⁸;

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Plain Language Summary: This presentation will highlight the experiences of five ethnoracial AIDS service organizations in Toronto in developing a community-based research (CBR) to improve mental health service access for immigrants and refugees living with HIV/AIDS (I&R-PHAs). Underpinned by principles of Greater Involvement of People living with HIV/AIDS (GIPA), this study engages I&R-PHAs in every step of the research. It showcases the ability for CBR to facilitate community empowerment and advance the political voices of marginalized groups when anchored by GIPA principles.

Objectives: Traditional research on people living with HIV/AIDS (PHAs), particularly those dealing with multiple marginalities, rarely offers opportunities for meaningful community involvement. This study aims to involve I&R-PHAs throughout the research process to 1) address the gaps in the literature around I&R-PHAs’ lived experiences; 2) facilitate dialogues among stakeholder groups to improve mental health services for I&R-PHAs; 3) build research capacity within I&R-PHA community; and, 4) situate I&R-PHAs at the centre of the planning process for the services that they receive.

Methods: Multiple entry points are created along the research process for I&R-PHAs to become involved. Through their presence on the Research Advisory Committee, community members play an important role in setting strategic directions for the study. To enhance community capacity, a team of I&R-PHAs are recruited in paid positions to undertake the day-to-day research activities. I&R-PHAs are also involved as co-investigators in data analysis and synthesis.

Results: By consciously adhering to GIPA principles, this study is able to meaningfully engage I&R-PHAs and avoid tokenism. However, the research team faces challenges when seeking funding. The community- and PHA-driven research design is sometimes deemed ‘substandard’ by academic/career researchers who serve as reviewers and dominate the funding processes. The study also struggles with fulfilling its vision of capacity building and social action under limited amount of time and resources available. Persistent advocacy and vision-building with academic and funding partners on GIPA principles are critical in overcoming these obstacles.

Conclusions: Integration of GIPA principles in CBR challenges the inequitable power relations entrenched in traditional HIV/AIDS research; in so doing, marginalized PHAs are given an opportunity to share control of the research and policy agendas. Therefore, the demonstration of GIPA in research proposals should be valued as a key criterion during funding evaluation rather than a hindrance. Changing existing funding structure so that CBR is supported by proper resources and accountability measures would also further the effectiveness of this proposed research model.

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ABORIGINAL CULTURAL COMPETENCE IN HIV/AIDS CARE: VIEWS FROM APHAS IN CANADA

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Plain Language Summary: Interviews with Aboriginal persons with HIV/AIDS (APHAs) reveal a range of cultural identities and experiences in coping with HIV/AIDS. How APHAs describe culturally competent or incompetent care reflects these differences. A few common themes are emerging: 1) since testing HIV positive, many APHAs want to reconnect with their Aboriginal heritage and traditional wellness practices, and; 2) many APHAs want to be treated as a "whole person" rather than a single disease.

Objectives: This study investigates issues related to the cultural skills and competence among primary and community-based professionals who provide care, treatment and support to Aboriginal people living with HIV/AIDS (APHAs) in Canada. The purpose of this study is to better understand the unique health care needs of APHAs and how culturally competent care affects the health outcomes of this population.

Methods: This is a three year project (2005-2008). Data collection methods include face-to face semi-structured interviews with APHAs and focus-groups with primary and community-based health professionals, in five regions of Canada. Interviews and focus-groups are recorded and transcripts are coded using Atlas.ti® software. This presentation is based on a preliminary analysis of 31 APHA interviews.

Results: Participants emphasize the importance of acknowledging the diversity of the APHA population in terms of cultural identity and experience. Descriptions of what constitutes culturally competent or incompetent care reflect that diversity. One theme among many APHA participants is that their HIV+ diagnosis has been a catalyst to reconnect with their Aboriginal heritage and to learn more about and access traditional Aboriginal wellness practices. Aboriginal front-line workers and peers are important because they possess an implicit level of understanding with regard to APHAs' histories, lifestyles, compliance issues and coping strategies. APHAs frequently indicate they want to be treated as a "whole person" rather than a single disease. Such an holistic perspective includes a desire to access a variety of medical and support services (both traditional and non-traditional) at a single location, where an overt Aboriginal presence (e.g. staff, peers, activities) and an informal atmosphere contributes to APHAs' level of "comfort."

Conclusions: Building cultural competency skills among health care providers may result in better quality care and increased satisfaction among APHAs that their needs are being met. A preliminary analysis of interviews indicates that APHAs' views of culturally competent or incompetent care reflects the diversity of cultural identities and experiences in coping with HIV/AIDS.

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THE 1ST AFRICAN AND CARIBBEAN HIV/AIDS RESEARCH SUMMIT: SELF DETERMINATION AND THE ROLE OF RESEARCH, A BRIEF REPORT OF THE OUTCOMES AND NEXT STEPS

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Plain Language Summary: The 1st African and Caribbean HIV/AIDS Research Summit was an opportunity for African and African Caribbean people, allies and researchers to meet, to identify HIV/AIDS related research priorities and gaps. The Summit was proactive in nature and developed to facilitate ethical, meaningful, timely research and investments into research that reflect the needs and leadership of African and African Caribbean people. The outcomes of Research Summit have been numerous and positive.

Objectives: The Research Summit addressed each of the following objectives: To disseminate and share current/on-going research projects and their findings among researchers and community members, including the identification of appropriate knowledge transfer strategies to build community knowledge and empowerment. To gain a better understanding of research needs pertaining to African and Caribbean communities and to identify capacity building needs within these communities. To prioritize research needs and develop a research agenda to guide researchers, ACCHO, funding agencies and Community-Based Organizations (CBOs). To promote and facilitate community-academic relationships that are meaningful and helpful to the well being of African and African Caribbean communities and encourage all types of researchers (i.e. basic science, clinical, epidemiological, socio-behavioural) to develop ethical and respectful relationships with African and Caribbean communities.

Methods: The HIV/AIDS Research Summit was developed as a result of consultations, reviewing literature, feedback from the affected communities and was identified in the ACCHO Strategy. A Planning Committee convened, agreement via consensus was used to finalize the agenda and a Working Group was assembled to address some aspects of logistics.

Results: The HIV/AIDS Research Summit was attended by 200 participants, over two days (April 28-29, 2006) the four research tracks: Epidemiologic and Surveillance, Socio-behavioural, Clinical/Basic Science and Community based research track hosted multiple presentations. Each track was complemented by a Q & A, and a small group discussion format to garner participant input for identifying HIV/AIDS related research priorities and gap.

Conclusions: The 1st African and Caribbean HIV/AIDS Research Summit was a landmark event that had unprecedented success. The direction and recommendations that have come forth as a result of the Research Summit have been embraced by key research funding/grant agencies at the provincial and national level, which will positively impact resource allocation, support research and researchers (clinical, basic science, epi, and socio-behavioural as well as a cross and within disciplines) that seek to invest in the quality of life of people of African heritage affected and infected by HIV.

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WORKING WITH 'COMMUNITY ETHICS' IN ABORIGINAL COMMUNITY-BASED HIV/AIDS RESEARCH

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Plain Language Summary: Community-based research (CBR) engages communities in research, but negotiating ethics guidelines and review procedures continues to present challenges. Ethics guidelines exist to protect individual research participants – that is, each individual participant must indicate (usually in writing) that they are aware of and understand the benefits and risks of participating in a research project – and researchers are obligated to plan and implement protocols to safeguard individuals from harm. However, the appropriateness of applying institutional ethics standards in community settings, particularly within the context of Aboriginal community-based research (ACBR) is being challenged. ACBR advocates and others suggest that there are 'community ethics' which move beyond individual experiences and expectations to encompass those of the collective. 'Community ethics' usually reflect a particular code of conduct as defined by the community in which the research is taking place. Aboriginal academics and researchers argue that Aboriginal individuals and communities require an adherence to culturally appropriate ethics protocols that respect the diversity of Aboriginal communities across Canada. These protocols would reflect the community involved in and affected by the research, ensure the issue of study is relevant, and create community change at the societal level.

Objectives: The objectives of this presentation are to explore the notion of 'community ethics' in ACBR according to the Canadian Aboriginal AIDS Network (CAAN), to demonstrate why CAAN values 'community ethics', and to provide some tools for understanding and negotiating 'community ethics'.

Methods: This presentation will draw on the experiences of the Research Unit at the CAAN, and highlight lessons learned through incorporating and implementing 'community ethics' as part of ACBR design.

Results: Community appropriate applications of ethics protocols in CBR have evolved through respectful conversations. CAAN uses the Principles of OCAP (ownership, control, access, and possession) as an ethics framework. This honours the cultural identities and protocols of Aboriginal communities, while ensuring research integrity. Lessons from the CAAN Research Unit such as requiring investigators to be engage with and understand a community's culture, the importance of self-reflection, returning findings to the community, and using research as a tool for social change will be discussed.

Conclusions: Recommendations and tools for negotiating ethics agreements will be offered with regard to facilitating conversations between community and those who distribute ethics certificates. More culturally appropriate approaches to engaging in and conducting research that meets 'community ethics' protocols, while still maintaining institutional standards, will be presented with special emphasis on working with Aboriginal communities.

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SISTERS, MOTHERS, DAUGHTERS AND AUNTIES: HIV PREVENTION FOR BLACK WOMEN - OBSTACLES AND OPPORTUNITIES

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Plain Language Summary: Black women in Canada are especially vulnerable to HIV/AIDS. This study explored the views and experiences of Black women regarding HIV/AIDS and its prevention. Findings suggest the primary importance of sexism, racism and poverty in Black women's vulnerability to HIV/AIDS; obstacles posed by existing HIV prevention strategies; and the importance of engaging the Black church in prevention efforts.

Objectives: Despite decades of HIV/AIDS research and intervention, success in reducing HIV risk among women overall, and Black women in particular, continues to prove largely elusive. Black women remain especially vulnerable to HIV/AIDS. The purpose of this investigation was to explore in depth the perspectives of Black Canadian women on HIV risk and prevention.

Methods: A qualitative investigation was designed and implemented in partnership between University of Toronto and Women's Health in Women's Hands Community Health Centre, and a Community Advisory Board. Four focus groups (3 in English, 1 in French) were conducted with Black women of African and Caribbean descent (n=26) recruited from community agencies in Toronto. Six key informant interviews were conducted with community advocates and service providers. Focus groups and interviews were digitally recorded and transcribed verbatim (and translated into English). Data were analyzed by three independent investigators using narrative thematic analysis, with N-VIVO qualitative software. Triangulation of data sources (clients/providers) and methods (interviews/focus groups), member checking and peer debriefing were used to increase the trustworthiness of the findings.

Results: Two primary themes emerged: HIV prevention obstacles and discrimination. HIV prevention obstacles included cultural and gendered disconnects between traditional beliefs/values and an HIV prevention discourse dominated by messages for men who have sex with men; powerful HIV/AIDS stigma that precludes open discussion about HIV risk and prevention; and lack of engagement of Black religious institutions. Discrimination emerged in terms of sexism, racism, poverty and homophobia, which result in constrained choices for women, diminish access to appropriate healthcare and counselling, and create obstacles to communication.

Conclusions: This investigation suggests the primacy of structural factors in producing heightened vulnerability to HIV/AIDS among Black women. Culturally-appropriate, gender-specific HIV prevention strategies for Black Canadian women may benefit from less focus on HIV/AIDS (i.e., disease), sex, and individual risk behaviours, and greater attention to structural determinants of risk. Effective prevention strategies for Black women should address gender-inequality, poverty, racial discrimination, homophobia and the lack of women-controlled prevention technologies, and focus on engaging the Black church, thus subsuming HIV prevention under the larger context of community survival.

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Prevention Technologies for Populations at Risk

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M-TRACK: SECOND GENERATION HIV SURVEILLANCE AMONG MSM IN CANADA: MONITORING TRENDS IN THE PREVALENCE OF HIV, VIRAL HEPATITIS AND STIS AND ASSOCIATED RISK BEHAVIOURS

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Plain Language Summary: Since the beginning of the HIV epidemic in Canada, men who have sex with men (MSM) have been severely affected by the spread of HIV, accounting for the highest number of AIDS cases and HIV diagnoses. The Public Health Agency of Canada (PHAC) has recently established M-Track; a second generation surveillance system to determine trends in HIV, viral hepatitis, sexually transmitted infections (STIs) and associated risk behaviours among MSM in Canada. The M-Track site in Montreal completed the first wave last year. Sites are currently being established in Ottawa, Toronto and Winnipeg and more sites are being planned across Canada.

Objectives: The national objectives of M-Track are to describe trends and to produce periodic national surveillance reports on the prevalence of HIV, hepatitis C (HCV), syphilis and associated risk behaviours at the national, provincial and local level.

Methods: M-Track consists of repeated, cross-sectional anonymous, self-administered behavioural surveys of MSM recruited at sentinel sites across Canada. Participants in the surveillance system are also asked to provide a biologic specimen (blood or urine) to test for HIV, HCV and syphilis. The ARGUS study team recently completed the collection and analysis of Phase 1 in Montreal. In Manitoba, an M-Track survey will be conducted in Winnipeg in fall 2006. In Ontario, M-Track sites are being established in Ottawa and Toronto. A feasibility study is planned at these sites for December 2006 with the survey to begin data collection in spring 2007. Surveys at each of the sites are expected to take place on a biennial basis.

Results: Currently, results are available from the Phase 1 survey completed in Montreal from January to August 2005. Approximately 2,000 MSM completed the self-administered questionnaires and provided dried blood specimens (DBS): 12.5% tested HIV-positive, of whom 23.2% were unaware of their infection. Among sexually active respondents, during the past 6 months 33.6% had unprotected anal sex at least once and only 3.6% had used crystal meth at least once during sexual relations. Close to one in five respondents agreed with the statement that "HIV/AIDS has become a controllable disease".

Conclusions: As we obtain more data from sites across Canada, M-Track's results will be used to enhance existing reportable disease surveillance systems and to better guide prevention and care programs. Information collected will be pertinent in establishing relevant prevention and intervention programs that will be most effective in this population. It will also help to monitor and model HIV incidence and prevalence.

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INCIDENT STI COINFECTIONS AMONG TORONTO'S HIV-INFECTED POPULATION

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Plain Language Summary: Once diagnosed, HIV-infected individuals routinely receive counselling on the need for safer sex practices. New sexually transmitted infections (STIs) reported after HIV diagnoses suggest unsafe sexual practices continue. An analysis of HIV cases reported in Toronto from 1992 to 2004 was carried out to determine the incidence of STIs and to identify risk factors associated with acquiring a new STI. Although a small proportion (8%) of HIV-infected individuals reported from 1992 to 2004 were subsequently diagnosed with STIs, STI coinfection rates are increasing among Toronto's HIV population. Having had a prior STI, identifying as a man who has sex with men (MSM), and being in a high risk age group are key risk factors for acquiring a new STI and should be the focus of public health interventions.

Objectives: The objective of this study was to examine the pattern of new STI coinfections within Toronto's HIV-infected population over time and identify risk factors associated with acquiring new STIs.

Methods: All HIV cases (1992-2004) and chlamydia, gonorrhoea and infectious syphilis cases (1990-2004) reported to Toronto Public Health (TPH) were extracted from Ontario's Reportable Disease Information System. Coinfections were identified by matching individual record numbers from HIV, chlamydia, gonorrhoea and infectious syphilis reports. Only STIs reported one incubation period or later following HIV diagnosis were counted as new coinfections. Demographic, risk exposure and counselling status data were analyzed using univariate and multivariate models.

Results: From 1992 to 2004, 7,538 HIV cases were reported to TPH. Of these, 1601 (21%) anonymous and post-mortem HIV reports were excluded. Among the 5937 remaining cases, 495 (8%) individuals reported 869 new STI coinfections. The most commonly reported new STI was gonorrhoea. From 1992 to 2004, the rate of new STI coinfections among HIV cases increased 9-fold from 5.5 to 51.9 coinfections per 1000 person-years. Having a prior STI report, identifying as MSM and being in a high risk age group were significant factors in acquiring new STIs after controlling for significant variables.

Conclusions: Although a small proportion (8%) of HIV-infected individuals reported from 1992 to 2004 were subsequently diagnosed with new STIs, the growing rate of new STI coinfections among Toronto's HIV-infected population is concerning and indicates an increased need to understand the context in which unsafe sex occurs. Public health interventions aimed at decreasing HIV transmission should include important patient factors such as having had a prior STI, identifying as MSM, and being in a high risk age group.

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A PROSPECTIVE COHORT STUDY OF UNIVERSAL OFFERING OF HIV- 1 POST-EXPOSURE PROPHYLAXIS IN SEXUAL ASSAULT VICTIMS/SURVIVORS

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Plain Language Summary: Although HIV is a potential consequence of sexual assault, few jurisdictions have guidelines on HIV post-exposure prophylaxis (PEP). We carried out a large prospective study on counselling and offering HIV PEP universally to sexual assault victims in Ontario, Canada.

Objectives: 1) To determine the feasibility of a standardized program of HIV counseling for all sexual assault clients and the offering of PEP to those at risk. 2) To determine HIV PEP acceptance and completion rates and to establish their predictors.

Methods: Sociodemographic, assailant, and assault data were collected on serial clients from 24 hospital-based Sexual Assault Treatment Centres. Those at high or unknown risk of HIV acquisition, presenting <72 hours post-assault were offered PEP. Combivir® 1 pill and Kaletra® 3 capsules BID were given for 28 days. Follow-up was provided at day 2-4, week 1, 2, 3 and 4; side effects were assessed at each visit. Univariate analyses were carried out using PEP uptake and completion rates as the endpoints and risk category (high-risk versus unknown risk) as the primary predictor.

Results: Of 1,103 evaluable clients, 81 (7.3%) were at no-risk, 88 (8.0%) high-risk, and 934 (84.7%) unknown-risk of HIV acquisition. After excluding clients who presented >72 hours, were HIV-positive or at no-risk, 900 (81.6%) were eligible for PEP. Rates of acceptance and completion were remarkably high:

	HIV PEP Offered	HIV PEP Accepted	28-day Course Completed
High-risk	97.2% (69/71)	66.7% (46/69)	23.9% (11/46)
Unknown-risk	87.9% (729/829)	41.3% (301/729)	33.2% (100/301)
Overall	88.7% (798/900)	43.5% (347/798)	32.0% (111/347)

Although not more likely to complete PEP, high-risk clients were 2.2 times more likely to accept PEP than those at unknown-risk ($p=0.01$). Factors that increased both acceptance and completion included being attacked by a stranger and client anxiety. Side effects were common (77.1% experienced grade 2-4 symptoms).

Conclusions: The universal counselling and offering of PEP to sexual assault victims/survivors appears feasible and warranted. Although high-risk clients accepted PEP at a greater rate than those at unknown-risk, equal numbers completed the course. Our completion rate was three times that reported in earlier studies.

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RISK BEHAVIOURS AMONG INJECTION DRUG USERS IN THE REGION OF WATERLOO, ONTARIO, CANADA

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Plain Language Summary: This study is part of a major research project that seeks to determine the cost-effectiveness of HIV and Sexually Transmitted Infection (STI) prevention programs in Ontario. As an initial step, we measured the sexual and drug risk behaviour of Injection Drug Users (IDUs) in the Region of Waterloo.

Objectives: The objective of this study was to investigate the level of injection drug and sexual risk behaviours of clients receiving needle exchange services.

Methods: Sixty IDUs were recruited among clients receiving services from two needle exchange facilities during June and July of 2006. Participants were recruited in collaboration with on-site staff members. The collaboration of the staff was especially important in promoting participation since IDU clients tend to build trust with staff members, thereby feeling that the confidentiality and anonymity of the information provided will be preserved. Clients were asked questions about (i) socio-demographic characteristics; (ii) drug use, including number of times injected with clean and used needles and number of partners sharing needles; (iii) sexual behaviour; and (iv) other programs. The information collected was analyzed and reported using descriptive measures.

Results: In terms of demographic characteristics, participants ranged in age from 16 to 58 years. The majority of the sample was male (85%), heterosexual (95%) with a yearly income of less than \$10,000 (70%). Many IDUs were at risk for HIV and STIs through sexual activities, though, only a minority was at risk of HIV infection through injection drug use. Over one half of the clients (67%) engaged in sexual activities in the previous month. Of those sexually active, more than half (53%) never used a condom, some of them (33%) used condoms sometimes and a few of them (15%) used a condom every time. All the clients interviewed had injected drugs in the previous month ranging from twice to 180 times. Most of the clients (73%) used a new needle every time they injected, a few (9%) injected with unclean needles previously used by others, and not many (18%) reused their own unclean needles.

Conclusions: Results show that clients face continued risk to HIV, Hepatitis B Virus, and Hepatitis C Virus infection due to unsafe sexual practices and continue to inject drugs with unclean needles. Therefore, it is recommended that needle exchange services augment or introduce safe sexual practices components to their services as well as continue providing needle exchange services to ensure that IDUs use new needles every time they inject drugs.

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NEEDLE DISTRIBUTION AND DISPOSAL: BEST PRACTICE RECOMMENDATIONS FOR NEEDLE EXCHANGE PROGRAMS (NEPS)

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Plain Language Summary: Recently, best practice recommendations for needle exchange programs in Ontario were released. Scientific evidence was reviewed and shows that to prevent the transmission of HIV and other pathogens from injection with non-sterile needles and other equipment, exchanges need to provide clients with sterile needles and other injection equipment (e.g., cookers, filters, acidifiers) in the quantities requested by clients, educate clients about the risks of using non-sterile equipment and proper disposal practices and address many other health and social problem.

Objectives: Best practice recommendations are increasingly developed for health and social service programs to improve service delivery and serve as a benchmark for evaluation. Our objective was to develop Best Practice Recommendations to guide core aspects of NEP service provision in Ontario.

Methods: The best practices recommendations were developed using a combination of the scientific evidence and consensus models, in order to draw on evidence from the scientific literature and expert knowledge. Two teams, one scientific and one practice-based, worked together to develop consensus on the specific recommendations. Recommendations were developed for core aspects of NEP service provision, including needle distribution, handling and disposal of needles, distribution of other injection-related equipment, program delivery models, overdose prevention, safer sex promotion, referrals and counseling, methadone maintenance treatment, primary care, relationships with law enforcement and program evaluation.

Results: To prevent the transmission of HIV, HBV, HCV, and other bloodborne pathogens from injection with non-sterile needles and syringes, scientific evidence supports providing clients with sterile needles in the quantities requested by clients, without requiring clients to return used needles, with no limit on the number of needles provided and with encouragement to return used needles. The literature also points to the need to educate clients about the risks of using non-sterile needles. Safer handling and disposal of equipment is important to prevent accidental needle-stick injury to clients, NEP staff and the general public and prevent the transmission of HIV, HBV, HCV, and other bloodborne pathogens. Evidence supports the need to educate staff and clients to safely handle and dispose of used injection equipment, not penalize clients who fail to return used needles, estimate the number of needles returned by clients, dispose of used injection equipment in accordance with local regulations for biomedical waste, and encourage HBV vaccination for NEP workers and clients. Strategies to increase return rates for used injection equipment, equipment preferences and exchange policies will be presented.

Conclusions: Although the recommendations are specific to Ontario, Canada, the Best Practice Recommendations may be used to guide the development of best practices for NEPs in other jurisdictions

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RESULTS OF THE EVALUATION OF THE CITY OF OTTAWA'S PUBLIC HEALTH DEPARTMENT'S SAFER CRACK USE INITIATIVE: A HARM REDUCTION SUCCESS

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Plain Language Summary: The HIV-related prevention needs of people who smoke crack have largely been ignored in the development of harm reduction programs. In April 2005 Ottawa Public Health Department started giving out glass stems, rubber mouth pieces and other resources to reduce the harms associated with smoking crack. After one year many crack users had started to use the program and the frequency of sharing implements to smoke crack declined and many users changed from injecting drugs to smoking crack - a less risky way to use drugs.

Objectives: Despite emerging evidence documenting the potential for HIV and hepatitis C (HCV) transmission through the multi-person use of implements to smoke crack, the prevention needs of people who smoke crack have largely been ignored in the development and implementation of harm reduction programs for people who inject drugs (IDUs). In April 2005, Ottawa's Public Health Department implemented an initiative to reduce the harms associated with smoking crack. Through the Safer Crack Use Initiative, glass stems, rubber mouthpieces, brass screens, and other harm reduction resources are distributed by the city's needle exchange programme (NEP). The objective of this study was to evaluate the impact of this initiative on HIV- and HCV-related practices one month, six months and 12 months following implementation.

Methods: Active, street-recruited crack-smoking IDUs consented to personal interviews at four time points: six-months PRE-implementation (October 2004, N=112); one-month (May 2005, N=114); six-months (November 2005, N=157); and 12 months (May 2006, N=167) POST-implementation. Descriptive and univariate analyses were completed.

Results: Uptake of the initiative was immediate, high and sustained: 80% of crack-smoking IDUs at one and six-months, and 87% at 12-months post-implementation had collected safer crack smoking resources from the NEP. A significant decline in the frequency with which equipment was shared was observed. Among those who reported they had used a pipe that someone else was using or had already used - pre-implementation 37% reported doing so every time. At the 12 month post-implementation point this proportion had declined significantly to just 13% ($p \leq 0.001$). Transitioning from injecting to smoking - a shift to a less harmful method of drug ingestion was documented. A significant increase in crack smoking among IDUs was observed - from 77% of IDUs interviewed six months prior to implementation to near universal engagement (97%) twelve-months post-implementation ($p \leq 0.001$). However, a significant decrease in injecting drugs in the month prior to interview was observed. Pre-implementation, 96% reported injecting in the month prior to their interview compared with 84% at one-month and 78% at six and twelve-months post-implementation ($p \leq 0.001$).

Conclusions: This controversial program had a significant impact - maintained at one year - in reducing the frequency of a practice known to be associated with HIV and HCV transmission and in driving a shift to a less harmful method of drug administration. These findings suggest the urgent utility of replicating this initiative at other NEPs.

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