Section I: Oral Sessions

Adolescent and Child Health

01-01 “Girls take charge”: A CBPR program at Girls Inc. Omaha
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Issues: Health disparities remain a major concern in urban communities. Community-Based Participatory Research (CBPR) has been shown to be an effective strategy for involving urban communities in tackling their own concerns. Teaching youth to implement CBPR has the potential to impact both the community and the youth themselves.

Description: Girls Incorporated is a national after-school program that states as its mission to inspire all girls to be “strong, smart, and bold”. A total of 9 African-American girls, ages 13–15, from Girls Inc. Omaha, which serves over 1,000 inner-city girls annually, conducted two CBPR projects, entitled “Girls Take Charge”. The 5-month long projects used the web-based CBPR curriculum, The Community Toolbox (CTB). The girls used Photovoice to assess community health disparities in inner-city Omaha; chose the topics of lead poisoning and child abuse prevention; and planned, implemented, and evaluated community interventions that impacted over 200 girls and their families. Outcomes included increases in knowledge, early identification of two children with high lead levels, and policy change. The impact on the girls themselves, including locus-of-control and self-perception, was also measured. The “Girls Take Charge” youths will present this paper.

Lessons learned: This program demonstrates that adolescents represent an important resource for community change.

Next steps: Over the next year, a manual will be written in English and Spanish; a WorkStation on the CTB will be developed; the project will be replicated with Hispanic youth in Omaha; and a federal grant will be sought to disseminate the program nationally. Youth will be involved in all levels of this expansion.

01-02 Childhood unintentional injuries in urban and rural communities in Newfoundland and Labrador, Canada
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Background: Unintentional injuries are the leading causes of death and hospitalizations among children and adolescents in Canada. The aim of this study was to determine and compare rates and causes of childhood hospitalization and mortality
due to unintentional injuries in urban and rural communities in Newfoundland and Labrador, Canada.

**Methods:** A comparative population-based study of unintentional injuries among individuals 0–19 years was conducted among urban and rural communities. Hospital discharge and mortality data were analyzed for a six-year period, April 1995 to March 2001. Population data were obtained from the 1998 population estimates.

**Results:** Overall hospitalization rates due to unintentional injury in urban and rural communities were 56.4 and 694.2 per 100,000 population, respectively (P<0.001). Males were at greater risk of unintentional injuries than females in both urban and rural communities (P<0.001). Fall and transportation injuries were the leading causes of hospitalization in both settings. The mortality rate was higher in rural than in urban communities (17.1 vs. 6.2 per 100,000 population) (P<0.001). Transportation and drowning injuries were the most common causes of death in both urban and rural communities. Difference between mortality rates among urban and rural communities was greatest for burn related injuries (P<0.001).

**Conclusions:** The rate of unintentional injury among children in rural communities is disproportionately higher than urban communities. Sex (male) and place of residence (rural community) were strong predictors of unintentional injury among children. Further studies are needed to identify more specific risk factors.

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**01-03 Examining a history of child maltreatment in street-involved youth in Calgary, Canada**

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**Background:** Studies report high rates of child maltreatment for street-involved youth in Canada however less is understood about the risk factors associated with this history of maltreatment. This study examined 1) differences between street youth reporting a history of maltreatment (CM) compared to no history (NCM), and 2) factors predicting a reported history of child maltreatment.

**Methods:** Community-based research methods were used to conduct a mixed methods study with street-involved youth in Calgary, Canada. Representatives from 13 community agencies and youth were involved as partners. Trained street outreach workers collected 355 anonymous surveys at a variety of locations, targeting youth with varying levels of street-involvement. For these analyses, street-involved youth with a history of child maltreatment (CM) were compared to street-involved youth with no child maltreatment history (NCM) using bivariate statistics and logistic regression was used to predict a history of child maltreatment.

**Results:** 51% of survey participants were 19 or less, 27% Aboriginal, and 61% male. 65% had a history of child maltreatment (CM) and of this group, 35% had not been reported to child welfare. CM youth were more likely to have previous street involvement (p<.001), have been asked to leave home(p<.05), and have family concerns (parental drug use (p<.001), alcohol use (p<.01), and domestic violence (p<.001)). CM youth were more likely to report health concerns (mental health (p<.05), poor physical health (p<.05) and involvement in pregnancies (p<.001)), and risk behaviours (suicidal thought (p<.001), involvement in survival sex (p<.01). Predictors for a history of maltreatment included domestic violence (OR 2.8, p<.01), suicidal ideation (OR 3.7, p<.001), and involvement in pregnancy (OR 2.1, p<.05).
Conclusions: Street-involved youth with a history of child maltreatment identified significant family difficulties and individual risk activities. These need to be addressed when planning a service continuum for street-involved youth.

01-04 Examining Pregnancy Experiences of Male and Female Street-Involved Youth

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Background: While some studies have been conducted with female street-involved youth, less has been done to examine pregnancy involvement and young street-involved males. This study examined a) factors predicting reported pregnancy involvement among female and male street-involved youth, and b) the views of street-involved youth on pregnancy/having children.

Methods: Community-based research methods were used to conduct a mixed methods study with street-involved youth in Calgary, Canada. Representatives from 13 community agencies and youth were involved as partners. Trained street outreach workers collected 355 anonymous surveys at a variety of locations, targeting youth with varying levels of street-involvement. Logistic regression modeling was used to predict pregnancy involvement separately for females and males. 42 in-depth interviews were undertaken by trained outreach workers with purposively sampled youth. Thematic analysis was used to explore meanings of pregnancy/having children where pregnancy was reported.

Results: 48% of survey participants indicated they had been pregnant/gotten someone pregnant (52% for females, 46% for males, $\alpha^2=\text{n.s.}$). Pregnancy predictors for females included lived on the street (OR 5.8, $p<.01$), charged with a crime (OR 3.2, $p<.01$), and attempted suicide (OR 2.8, $p<.05$). For males, pregnancy involvement predictors included injected drugs (OR 2.4, $p<.05$), asked to exchange sex for food/shelter (OR 2.3, $p=.05$), and age (compared to <20: 20–24 OR 2.2, $p<.05$; 25–30 OR 5.5, $p<.05$). Among interview participants, pregnancy/children were described as being a motivator to “smarten up” or take “responsibility” to reduce their street involvement. No differences in views were evident for young men and women.

Conclusions: Results suggest predictors of pregnancy are different for females and males, although for both, pregnancy is associated with risks that are part of street life. Pregnancy is perceived as a positive outcome by both male and female street-involved youth, and is seen as part of a passage to adult responsibility.

01-05 Factors related to undiagnosed asthma in urban adolescents

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General methods to derive childhood asthma prevalence may underestimate the true burden of asthma on national and community levels. Asthma questions on national health surveys are limited generally to lifetime physician diagnosis; several school-based prevalence measures rely on school nurse counts of asthma medication. These two strategies do not account for possible asthma cases that have been undiagnosed
or untreated, which indicates the need for more refined surveillance methods. In school years 2006–07 and 2007–08, a brief survey based on the ISAAC (International Study of Asthma and Allergy in Childhood) written questionnaire was distributed in 20 middle schools in Oakland, CA. Students were classified as “current asthma” if they reported a physician diagnosis of asthma as well as a constellation of symptoms associated with asthma-related morbidity. Students were classified as “possible undiagnosed asthma” if they reported two symptoms specific to asthma and no physician diagnosis. A total of 4,017 students completed the survey and were able to be classified. Approximately 20 percent of students (n=805) were classified as “current asthma,” 4.8 percent (n=194) of students were classified as “possible undiagnosed asthma.” Preliminary logistic regression results indicate that females (OR: 1.45, 95% CI: 1.056, 2.014), and students who resided in landuse zones designated as urban residential (OR: 2.10, 95% CI: 1.20, 3.67) were more likely to be classified as possible undiagnosed asthma compared to current asthma. Students who completed the survey in Spanish, self-identified as Latino, or reported speaking Spanish at home were all more likely to be classified as probable undiagnosed asthma, though none of these factors reached statistical significance. Local school-based surveillance may serve as a system to estimate the burden of undiagnosed asthma in the community, as well as a referral tool for clinical evaluation.

01-06 Food intake of adolescents from 15 to 25 years of age in the city of Belo Horizonte, Brazil, according to anthropometric profile and the Index of Health Vulnerability

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Background: This study aimed to evaluate the food patterns according to areas of risk of the city and anthropometric profile.

Methods: We used data from the household survey carried by Brazilian National Cancer Institute (2003). BMI (body mass index) and the food intake (FI) of adolescents (15–24 yo), in Belo Horizonte (BH) City, was analyzed. Risk areas were defined according to Index of Health Vulnerability (IHV), elaborated by the City Health Department. Sperman correlation of FI with IHV was verified in each adolescent group categorized by with and without weight excess (WE).

Results: Out of 630 adolescents, 52.7% were men, with mean of 19.7±2.8 yo. The prevalence rate of WE was 12.4% (CI95%=9.4–15.4). FI was significantly correlated (p<0.05) with IVH. In areas of higher IHV risk the consumption was lower in: cheese or cream cheese (−0.26), milk (−0.14), salamis (−0.24), canned food (−0.18), steak or meat (−0.16), vegetable (−0.15), fruit or fruit juice (−0.13) and cakes (−0.11). The consumption of beans was positively correlated (0.29). Amongst the individuals with WE, an increase of the magnitude of correlations with the consumption was verified for cheese or cream cheese (−0.36), milk (−0.28) and steak or meat (−0.28). The consumption of butter, in this group, also presented significant correlation (0.33), while cakes, vegetables, fruit or fruit juice, food canned was not correlated. In the individuals without WE, the consumption of fruit (−0.17), vegetables (−0.21) presented correlation with the IHV.
Conclusions: This study suggests that FI could be directly influenced by individual characteristics in people with WE while in the others without WE, the area of risk could possibly have greater impact.

01-07 Living in the hood: Perspectives from urban black youth about their neighborhood
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Purpose: Previous research has found a link between neighborhood risk and youth health outcomes. Few studies have taken into consideration both positive and negative neighborhood characteristics. In particular, there is a dearth of literature which seeks to understand how urban youth make meaning of their environment. Thus, the current qualitative study was conducted to examine perspectives of neighborhood context among urban Black adolescents.

Methods: Fifteen youth were recruited from two community agencies located in Brooklyn, NY. The sample included Black (non-Hispanic) youth ages 16–19 (9 female, 6 male). Youth participated in a one hour face-to-face interview. Transcripts were read and major themes/topics were flagged and coded.

Results: Youth often mentioned violence in their neighborhoods, including the presence of gangs, fighting, and robbery. Drug activity was also frequently observed. In spite of the vivid descriptions of violence and drug activity, youth perceived their neighborhoods as good. Positive notions included a feeling of closeness among residents and that the environment helps to make youth strive for better lives. Youth were able to list some resources but many were described as run down or un-kept. Youth referred to having ‘nothing to do’ in their neighborhood. As a result, many of the residents spend their time ‘hanging out’ on street corners or outside apartment buildings.

Conclusions: Results from this study confirm previous research indicating urban Black youth observe a lot of violence and drug activity in their communities. In particular it seems that the culture of hanging outside may overexpose youth to neighborhood risks. Youth from this study felt positive about their neighborhoods despite the challenges experienced in their environment. This study highlights the importance of considering both positive and negative aspects of urban environments. Future research should examine the pathways by which these factors may influence health outcomes among urban Black youth.

01-08 Oral health and healthy cities: An analysis of intra-urban differentials in oral health outcomes in relation to “healthy cities” policies in Curitiba, Brazil
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Background: The study addressed how policies related to a “healthy cities” approach could affect children’s oral health, in Curitiba, Brazil. We hypothesized that “healthy cities” policies, with the mediating effects of community social cohesion, affected the oral health of children.
Methods: Matched deprived areas in the city of Curitiba that had or had not “healthy city” policies implemented were selected. Data were derived from two complementary studies: 1) The panel study gathered data on socio-environmental variables in 29 deprived communities of Curitiba; 2) The survey study collected individual clinical data on oral health outcome variables and covariates (children’s socio-economic, demographic, and dental characteristics). All children came from public schools and were twelve years old (n=2126). Fourteen variables from the panel study instruments were assessed by factor-analyses. Three components were extracted: physical environment, public social policies, and social cohesion. We used meta-analysis and meta-regression to examine associations with dental trauma, dental pain and being caries-free.

Results: Rank correlation indicated that the relationship between components’ scores and outcomes was statistically significant. The scores explained 48% of the variance for caries-free, 42% for dental trauma, and 17% for dental pain. Only sex remained significant as an independent association: males had more dental trauma than females. The physical environment component obtained the strongest relationship with dental trauma. The public social policies component was strongly related to caries-free individuals, and to dental trauma. The social cohesion component was the strongest predictor for caries-free, and the only component predictor for dental pain.

Conclusions: “Healthy cities” policies, social cohesion, and sound physical environment can significantly affect oral health and should be promoted as an integrated strategy in local health areas.

01-09 Preventing childhood obesity: Socioeconomic, family, and cultural influences on healthy nutrition for disadvantaged youths
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Background: Since the late 1960s, childhood obesity rates have nearly tripled among children ages two to five years and children over eleven; these rates have also quintupled among children ages six to eleven years.

Methods: Literature review including policy evaluation.

Results: While there are numerous reasons for these increases, parental involvement in the child’s nutrition is one of the most noteworthy predictors of childhood obesity. In a disadvantaged urban environment, parental involvement is often stifled by such realities as low parental education, single-mother households, and maternal employment (Neumark-Sztainer et al., 2003). In addition, nutritional choices are often associated with food affordability and availability, but not necessarily with long-term health objectives. The lack of grocery store choices and inadequate availability of high quality, low cost nutritious foods often leave urban dwellers with limited choices of nutritionally poor, high fat and high carbohydrate foods (Moreland et al., 2006). Finally, a culture of poor eating habits in urban centers contributes to childhood obesity (Institute of Medicine [IOM], 2007).

Conclusions: Increased access to high quality foods, improvements in parental involvement, and promotion of cultural change toward healthy nutrition are key factors to halting childhood obesity. The IOM (2007) suggests that with the support of federal, state, and municipal governments, schools, communities, industries, the media, and families could work in concert to arrest the obesity epidemic. In this
presentation, the authors will review studies and interventions focused on parental involvement and improved access to nutritious food choices in urban centers with the aim of identifying areas for future research.

01-10 Push and pull factors: Evidence for distinct sub-populations of street youth in British Columbia
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Background: Street-involved youth constitute a sizable vulnerable urban population that public health and social service programs often have difficulty reaching. Studies of youth street-involvement focus heavily on family factors that “push” youth onto the street. Far less attention is paid to factors that may “pull” youth into street life, aside from how street-involved peer networks introduce individuals to street activities. Drawing from both research streams, we formulate a four-fold typology of how youth become street involved via push and pull factors. We empirically assess this typology with respect to sociodemographic characteristics, current substance use, vulnerability factors (i.e., time since first street involvement and reported substance use-related harms), and patterns of help-seeking.

Methods: We analyze data from a sample of 762 street-involved youth (ages 12–18) recruited in several British Columbia urban communities through the McCreary Centre Society’s 2006 Street Youth Survey. Categories for our four-fold typology—pushed only, pulled only, both, and neither—were based on self-perceived reasons that youth provided for why they first became street involved.

Results: Bivariate associations revealed a consistent pattern whereby those reporting being “pushed” into street involvement (e.g., due to family conflict/violence) were significantly more likely than those reporting being “pulled” (e.g., due to having friends who hang out on the street) to seek help from a variety of formal services. Notably, this applied to whether or not youth would seek help for substance use problems. Few between-group differences were found for sociodemographic and vulnerability factors. Multivariate analyses controlling for vulnerability and sociodemographic factors replicated this consistent help-seeking pattern.

Conclusions: These findings suggest the existence of distinct subpopulations of street-involved youth in British Columbia in terms of vulnerability as well as services sought and accessed. Whether youth are pushed and/or pulled into street life has important implications for designing effective outreach for health and social services.

01-11 Scaling up: Sexual and reproductive health services for urban young people in developing country public sector
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Background: Youth (in the 10–24 years age group) constitute 41 percent of Nepal’s population. They are a vulnerable and neglected group. Their health needs,
particularly their sexual and reproductive health needs are often misunderstood, unrecognised, or underestimated.

**Method:** Considering this scenario, two intervention studies were conducted to provide SRH services to adolescents in educational institutions. To upscale this intervention, a collaboration work with CBOs and NGOs was initiated.

**Results:** The objective of the project was to create a friendly environment at the urban health posts as well as in the community for young people, and to improve their service utilisation through networking with health care institutions. The challenges faced while implementing the project were mainly related to developing partnership with the local bodies and other networking partners, involvement of health care providers and other stakeholders and the young people themselves. Other constraints were inadequate capacity of health staff in dealing with young people’s SRH issues, over-emphasis on implementation of certain national programmes, perceiving adolescent health service as an additional burden of work, hidden aspirations for monitory gains, and apprehensions of gatekeepers about the types of adolescent services and IEC activities provided.

**Conclusion:** Some successes included: signing of a memorandum of understanding with the local bodies; assigning roles and securing the commitment of collaborating institutions; advocacy and orientation of stakeholders; needs assessment of young people; regular demand-generation activities by outreach IEC programmes; and regular feedback from beneficiaries and volunteers that encouraged a steady flow of clients to the centre. The experience of the project was used for designing the recently launched in Government program of Adolescent Reproductive and Sexual Health (ARSH).

01-12 Smoking among adolescents in an urban setting: A household survey

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**Background:** Tobacco smoking is a licit drug very used by adolescents worldwide. This study aims to estimate smoking prevalence in Belo Horizonte City, Brazil, and related risk factors among adolescents.

**Methods:** We used data from the household survey carried out by Brazilian National Cancer Institute (2003) in 15 Brazilian capitals and the Federal District. The following variables were considered: demographic data; physical activity; diet; smoking (in the individual, the familiar group and the social group); alcohol consumption; among others. This study included information on 630 adolescents (age 15–24) living in Belo Horizonte. Smoking prevalence rate was estimated and multivariate logistic regression analyses were carried out.

**Results:** The overall smoking prevalence rate was 11.7% (95%CI=9.1%–14.4%), 15.1% for males and 8.9% for females (p=0.02). The following were the associated factors for smoking: alcohol consumption (OR=20.6; 95%IC=8.6–49.2), older age (OR=1.2; 95%IC=1.1–1.4); father who smokes (OR=4.0; 95%IC=1.9–8.5), brother who smokes (OR=2.5; 95%IC=1.2–5.2) and having a better friend who smokes (OR=5.2; 95%IC=2.5–10.9).
Conclusions: The prevalence of smoking among adolescents in the city was high, increasing with age and alcohol consumption. Therefore, it is important to adopt measures of prevention and to delineate actual interventions.

01-13 Spatial analysis of dental caries condition among dental service users at the public health system in Belo Horizonte, Minas Gerais, Brazil, 2000
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This study is about investigations on public health aiming to analyse health and disease within the structure of society. It is among the ones that, based on epidemiology and health geography try to explain the occurrence and manifestation of diseases in urban contexts. The objective of the present study was to observe the distribution of dental caries condition in the intra-urban areas of the municipality of Belo Horizonte. The information source used was the data supplied by the users of SUS (Public Health Service) dental services in Belo Horizonte, in 2000, at their first appointment. The data were stored at the Municipal Health Department. The population condition of dental caries was analyzed under spatial requisite related to the area where the users live and the requirements for the spatial analysis and for the employment of GIS (Geographical Informations Systems). It was then possible to identify 11359 domiciles of dental service users. The municipality map of census areas classified in the Health Vulnerability Index was used as the map base. Dental caries profile was analyzed following the international standards established by the World Health Organization (WHO) in 1997. The results showed that most users (46,7%) ranged between 5 and 14 years old. The population studied showed a higher prevalence of dental caries compared to other epidemiological studies carried out in the municipality of Belo Horizonte as well as in other places all over the country. The children presents a high need of restorative dental treatments, low access to dental care assistance attested by a low percentage of restored teeth and the beginning of early dental loss among young individuals. Needless to say that the caries profile observed among the population studied reflects social injustices related mainly to winning the rights to oral health and to a worthy life condition.

01-14 Structural factors associated with an increased risk of HIV and sexually transmitted infection transmission among street-involved youth
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Background: The prevalence of HIV and sexually transmitted infections (STIs) among street-involved youth greatly exceed that of the general adolescent population; however, little is known regarding the structural factors that influence disease transmission risk among this population.

Methods: Between September 2005 and October 2006, 529 street-involved youth were enroled in a prospective cohort known as the At Risk Youth Study. We examined structural factors associated with number of sex partners using quasi-Poisson regression and consistent condom use using logistic regression.
**Results:** At baseline, 415 (78.4%) were sexually active, of whom 253 (61.0%) reported multiple sex partners and 127 (30.6%) reported consistent condom use in the past six months. In multivariate analysis, self-reported barriers to health services were inversely associated with consistent condom use (adjusted odds ratio [aOR]=0.52, 95%CI: 0.25–1.07). Structural factors that were associated with greater numbers of sex partners included homelessness (adjusted incidence rate ratio [aIRR]=1.54, 95%CI: 1.11–2.14) and having an area restriction that affects access to services (aIRR=2.32, 95%CI: 1.28–4.18). Being searched or detained by the police was significant for males (aIRR=1.36, 95%CI: 1.02–1.81).

**Conclusions:** Structural factors amenable to policy-level interventions were found to be independently associated with sexual risk behaviours. These findings suggest that the criminalization and displacement of street-involved youth may increase the likelihood that youth will engage in sexual risk behaviors and exacerbate the negative impact of the resultant health outcomes. Moreover, our findings point to the need for environmental-structural interventions to reduce the burden of these diseases among street youth in urban settings.

**01-15 The effect of neighbourhood on adolescent psychosocial adjustment in Quebec**

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**Background:** Investigating the impact of disadvantaged neighborhoods on children’s mental health is a recent new approach to promoting child health. The aim of our study was to examine the association between neighborhood characteristics and psychosocial maladjustment in adolescents in the province of Quebec.

**Methods:** Data: Social and Health Survey of Children and Adolescents in Quebec, 1999 (Quebec Statistics Institute, Quebec, Canada). Subjects: 1186 adolescents aged 13 and 1160 adolescents aged 16, and their parents. Outcomes: psychological distress, conduct disorders and/or oppositional attitudes, and substance abuse. Independent variables: neighborhood characteristics reported by parents at the individual level (urban physical characteristics, social support, insecurity and drug traffic). Covariates: demographic variables, parental mental health and family socioeconomic status. Statistics: logistic regression analysis.

**Results:** With the exception of the social network, which was a protective factor against conduct disorders, the positive urban characteristics of the environment had no effect on adolescent psychosocial adjustment. After adjusting for social and psychological familial characteristics, living in an insecure and high-drug-traffic area was found to be associated with psychological distress and conduct disorders in adolescents. For drug use, the pathway from a high-drug-traffic neighbourhood to adolescent substance abuse was explained by a higher risk of parental substance use in such areas.

**Conclusion:** These results suggest that the social network and negative environmental factors may play a role in adolescent psychosocial adjustment, apart from individual and familial factors. Our findings provide an argument for enhancing neighborhood-level interventions in public policy in order to promote adolescent health.
01-16 The inter-temporal relationships between childhood asthma and obesity
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Background: To date, the research on asthma and obesity in children has almost exclusively focused on a unidirectional relationship, with obesity being a causal factor in the diagnosis of asthma. No studies that we know of have focused on whether asthma leads to increased obesity in children. Adding to the economics and public health literatures, this research will attempt to understand the directions and magnitude of temporal relationships between asthma diagnosis and subsequent obesity in children. We also pay particularly close attention to differences in asthma and weight outcomes by race and poverty status.

Methods: We use The Early Childhood Longitudinal Study-Kindergarten Class of 1998–99 (ECLS-K), a nationally representative, longitudinal study that follows a cohort of children beginning from kindergarten to middle school. The ECLS-K focuses on children’s early school experiences and allows researchers to study how individual, household, educational and community factors are related to school performance. The total sample consists of more than 10,000 children over 4 periods of time. We estimate a simple model that analyzes the covariance between an asthma diagnosis and obesity over time. We use a fixed effects specification and also explore other models of unobserved heterogeneity as well.

Results/conclusions: Preliminary results show that asthma is related to child weight-for-height over time. Moreover, obesity and asthma are disproportionately distributed among low-income, inner-city and minority populations. These findings suggest several potential areas of policy relevance. Our research suggests that asthma and obesity interventions should be jointly targeted. Even if asthma leads to increases in weight over time, obesity tends to exacerbate existing asthma. Finally, in that health outcomes differ by poverty or food stamp program participation status, this may suggest that policy intervention be targeted by subpopulation.

01-17 Transition into first sex among adolescents in slum and non-slum communities in Nairobi, Kenya
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Background: Early sexual debut predisposes adolescents to negative sexual and reproductive health outcomes. High-risk urban neighborhoods form a unique context which poses challenges for the sexual and reproductive health of young people.

Methods: This presentation uses population-based data collected from 1547 (52% females) adolescents aged 12–19 years who were virgins (67% of adolescents who have data for two waves) during the baseline survey. The study examines whether sociodemographic and risk and protective factors measured at baseline are predictors of transition to first sex by Wave 2, a year later, among adolescents in slum and non-slum communities in Nairobi, Kenya.

Results: About 13% of respondents transitioned into first sex. Median age at first sex was 15 years for slum residents compared to 17 years (males) and 18 years
(females) among non-slum dwellers. In general, slum residence was associated with a greater risk of making the transition. Among females, school attendance was protective. High parental monitoring was associated with greater odds of making the transition among females living in non-slum areas and among older females. Peer models for pro-social behavior were protective for males aged 12–15 years, for male slum dwellers, and female non-slum residents. Peer models for anti-social behavior were a risk factor for girls aged 16–19 years and female, non-slum residents.

Conclusions: Findings underscore the need to focus on very young adolescents, particularly those living in resource-poor settings, or who are out of school, as they may be highly vulnerable to negative health outcomes of precocious sexual activity.

01-18 Trends in vaccine-induced immunity to hepatitis B among Canadian street-involved youth (1999–2005)

L. Huang1, M.-L Gilbert1, T. Wong1, G.C. Jayaraman1, f.t. Enhanced Street Youth Surveillance Program2

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Background: In Canada, the universal HBV vaccination programme has contributed to decreases in hepatitis B infection. However, the risk of HBV infection remains high among certain populations. Here, we present trends and associated determinants of vaccine-induced immunity to HBV among Canadian street-involved youth in six urban centres.

Methods: Data were collected via the Enhanced Canadian Street Youth Surveillance (E-SYS) program. Vaccine-induced immunity was identified as being anti-HBc negative and anti-HBs positive.

Results: The proportion of youth with HBV immunity to has increased from 34.7% in 1999 to 64.4% 2005 (p<0.001), but the overall proportion remains low at 51.7%. Site specific differences in HBV immunity were observed from 23.8% to 58.6%. Compared to older youth (20–24 years), younger youth (15–19 years) had a higher proportion of vaccine-induced HBV immunity (58.6% vs. 42.3%, p<0.001). Immunity was also higher among youth who

1 were females [OR=1.30 (1.05, 1.60)],
2 had completed secondary school [OR=2.66 (1.17, 6.06)],
3 reported NOT having ever been in a jail or a remand centre [OR=1.18 (1.13–1.45)],
4 reported living with their parents in the past year [OR=1.36 (1.17–1.57)],
5 reported same sex behaviours [OR=1.31 (1.06, 1.62), or
6 reported having been previously diagnosed with an STI by a physician [OR=1.34 (1.08,1.66)]

Conclusion: Vaccine-induced HBV immunity remains low among E-SYS participants. The reasons for these low levels are not clear given the implementation of the universal immunization program in Canada. There is a need for creative outreach programs to access and increase vaccine coverage in this population.
01-19 Youth diversionary projects: Challenges in evaluating the health effects of a social intervention
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Aims: Youth diversionary projects aiming to reduce anti-social and criminal behaviour are being carried out in Glasgow (Scotland). Some of these projects target small groups of young people who are involved in offending, while others provide a range of activities (e.g. coached sporting activities, dance, art, drama, IT) to large numbers of young people. It is hypothesised that similar mechanisms may bring both reductions in offending and improvements in health. Also, reductions in crime may result in longer-term health impacts. Changes in participants’ use of leisure time may bring health improvements by: reducing individual health risk behaviours such as drinking, smoking and drug use; and reducing the chances of accidents and injuries resulting from fire setting and gang fighting. Improvements to community safety may result in positive changes for the wellbeing and mental health of residents, through reducing fear of crime.

Methods: We developed an evaluation framework to assess the possible impacts of youth diversionary projects on determinants of health related to the projects. Data from project participants, local residents, stakeholders, and routine data is being used to assess possible impacts on anti-social behaviour and crime.

Results: Youth diversionary projects do not focus directly on health improvement so theories of potential pathways to health were explored. Key outcome data from the evaluation will be presented. In evaluating these action-orientated projects the lack of availability of data to allow attribution of impacts to specific interventions is problematic. However, lessons can be learned, for example in relation to the use of theories of change to shape an evaluation, and of proxies for health impacts.

Conclusions: The implications of findings for practice will be discussed. This evaluation of ‘youth diversionary projects’ also has implications for wider research on the impact of social interventions on child and adolescent health in urban regeneration contexts.

Aging and Health in Urban Settings

02-01 Acceptability of using computer-based interview technology with older adults: Pilot study results
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Background: This research examines the acceptability of using Audio Computer-Assisted Self-Interview (ACASI) technology with older adults involved in a larger study aimed at estimating the burden of elder mistreatment [EM] in a large urban sample of community-dwelling elderly.

Methodology: Older adults visiting either a dental clinic or a primary medical care clinic within in an urban setting (NYC) are recruited to complete a 40 minute computer-based interview either before or following their appointments.

Results: To date, 122 participants have completed interviews. The overall mean age of participants is 75 years (range 65–93, sd=6.8) and 62% of respondents are female. On average, participants reported receiving 8.6 hours of care per week
Although age, gender, weekly care received, and diagnosed medical conditions reported do not differ significantly between the sites; patients are significantly different in terms of education, insurance, and ethnicity. Additionally, reactions to the use of ACASI are being captured. Positive feedback includes: expressed novelty, ease of use, functional capacity, appropriate literacy level and bilingual language of the screens, and additional perceived degree of privacy/confidentiality. Negative reactions include: computer anxiety, required assistance, robotic nature of the computer voice and perceived time pressure. Of those who have been approached, 33% have enrolled.

Conclusions: This study explores the feasibility of innovative screening for EM in busy primary care settings through the use of ACASI. Results are important for future research involving advanced technology with older adults and may potentially shed light on effective EM screening strategies.

02-02 Assessing the health state/disability score of the elderly in the slums: An analysis using the frontier method
O. Faye

Using the parametric stochastic frontier approach this paper explores how occupational histories and living conditions affect the health performance among the population aged 50 and more in slums in Nairobi. We measure the health performance using the disability scores from the WHO. In our estimation strategy, we first consider the WHODAS II - 12 items score and thereafter simultaneously analyze several dimensions of health state description (cognitive, mobility, pain and discomfort, sleep and affect, etc.). We use individual data collected during the first panel survey of the aging component of the five-year program on “Urbanization, Poverty and Health Dynamics in Sub-Saharan Africa” carried out by the African Population and Health Research Center - APHRC. The aging project studies old people living arrangements in two slums in Nairobi (Korogocho and Viwandani) in relation to their health profiles, economic activities, and the cares and supports provided and received. The project also integrates request from WHO to collect and analyze data on a broad range of self-reported assessments of health and well-being of the elderly in slums in Nairobi.

02-03 Designing against falls: Impact of the built environment on older adult falls
S. Johnson

Falls are the most common cause of injury among elderly people. Approximately one-third of community-dwelling seniors experience at least one fall per year, and half of these experience repeated falls. Falls are complex events, resulting from a combination of intrinsic (personal) and extrinsic (environmental) factors. But many older adult falls are preventable. The focus of this presentation is on the potential for reducing the incidence and severity of older adult falls by focussing on environmental (extrinsic) factors. In particular, this presentation identifies possible improvements to environmental design that address the physical, intellectual and
psychological changes that accompany the aging process. As the research literature on environmental design and aging/falls is relatively sparse, this presentation draws on many sources relevant to the prevention of older adult falls through changes to the built environment. Research from multiple disciplines is synthesized in order to highlight elements of ‘safe’ and ‘unsafe’ environmental design from an older adult perspective. The presentation concludes with a brief discussion of lessons learned to date with respect to implementing an environmental design approach to falls prevention.

02-04 Findings & lessons from the age-friendly New York City project
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In an age-friendly city, policies, services and structures related to the physical and social environment are designed to support and enable older people to live in security, enjoy good health and continue to participate fully in society. New York City is currently engaged in a groundbreaking process to become more age-friendly. Age-friendly New York City is a collaborative initiative of the New York Academy of Medicine, the Mayor’s Office and the City Council to make all aspects of city life - including its structural, social, economic, and health and supportive features - more accessible to, and inclusive of, older residents with varying needs and capacities. The initiative is particularly focused on eight issues: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information; and community support and health services. The assessment process, which was guided by the World Health Organization’s Age-friendly Cities protocol, included focus groups with older adults, expert roundtable discussions, town-hall meetings with hundreds of residents, secondary research, and data mapping. The result is a detailed report of findings to inform recommendations for making the city more “age-friendly.” This report will be released to the public in 2008 and a high-level Commission will be convened to develop an action plan and oversee its implementation. This presentation will introduce participants to the concept of an “age-friendly city,” the inclusive planning process utilized in New York City that incorporated the voices of various constituencies, and the findings, lessons and next steps that have emerged. Participants will gain understanding of the collaborative process undertaken in New York City and learn lessons that may be incorporated into their work.

02-05 Integrated neighbourhood networks: Creating a regional vision
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Issues: “Healthy aging” and “aging in place” are key areas of research and endeavor worldwide. As the world’s population ages, these issues are taking center stage and a range of initiatives supporting the above are being piloted across the world. The Vancouver Coastal Health Region (VCH), in Vancouver, British Columbia, has
identified a number of strategic priorities in support of “healthy aging in place” including Campuses of Care and Integrated Neighbourhood Networks (INNs).

**Description:** This project developed a vision and conceptual model for INNs. Through regional and provincial key stakeholder interviews and a comprehensive literature review, key health and non-health components that are required to support the healthy aging of seniors in place/community were identified. This presentation will discuss the key components and benefits of INNs, and will provide examples of how the components can be implemented within VCH.

**Lessons learned:** The main lesson learned in developing the conceptual model for INNs is that the health system alone cannot support seniors to age in place. Community-based organizations and agencies outside of the health care realm need to be partners.

**Next steps:** VCH has identified Richmond’s Blundell neighbourhood as the pilot for operationalizing the INN concept. The pilot project began in October 2007 with completion anticipated in September 2009. A number of strategies have been identified for implementation along with key performance indicators to measure success.

**02-06 Making cities age-friendly**

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Urbanization, globalization and population aging are converging to create new challenges for cities. The number of older persons (age 60+) will increase from the current 600 million to 2 billion by 2050. Urbanization will continue to occur at an equally fast pace. Making cities “age-friendly” is one of the most effective policy approaches for responding to demographic aging, as over half of the global population now lives in cities. In an age-friendly city, policies, services and structures in the physical and social environment are designed to enable older people to live in security, enjoy good health and continue to participate fully in society. The World Health Organization issued a protocol to guide 35 cities around the world in working with older people, care givers and providers to assess how age-friendly their cities are and then mobilize for change. The resulting guide is innovative because older people were active participants in its development: they decided what an age-friendly city should be. The guide focuses on eight areas of city living: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information; and community support and health services. It proposes easy, affordable measures to make a city more age-friendly. Examples include: having affordable transportation costs; holding public events at convenient times; having courteous and helpful service providers; promoting and supporting job opportunities for older people; and providing clear information about health and social services. This presentation will describe an “age-friendly city,” the protocol for increasing a city’s “age-friendliness;” and offer guidance on how to develop, implement and evaluate local action plans to make the environment more age-friendly.
02-07 Place making that reflects quality of life issues
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Issue: Drawing on multi scalar experience from policy reviews for the EU platform Social Polis to field work in Japan to more than a decade of participative research with older people, reveals that the academic and policy arenas lack knowledge about the experience of growing old in urban places. The accelerated changes to physical and social fabric of cities have increased the physical and cognitive pressures on older people which need to be explored from an experiential perspective.

Description: Recent research in the UK that asked older people to identify quality of life criteria revealed that health, income, social networks, community participation, information, activities, home, neighbourhood and mobility are key areas where old age can be enriched or undermined. The paper argues that of these, home, neighbourhood and mobility are paramount for four reasons. Firstly older people are seen as situated, even fixed, in domestic environments; secondly society has responded to later life by creating age-segregated spaces; thirdly lessening mobility may increase the importance of the local arena and fourthly the interplay between the self and the environment underpins or undermines independence. The significance of place means that planners, even more than other professionals, need to be age aware and health focused.

Lessons learned: The paper contemplates what a more age friendly place might be like and how this might be promoted by joining with other more high profile agendas such as sustainability and community cohesion.

02-08 Realizing the role of older people in urban emergencies and disasters: Age-friendly learning from the Great Hanshin Awaji Earthquake
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Issues: Globally the proportion of older people is growing faster than any other age group. In 2000, one in ten or about 600 million people were 60 years or older. By 2025, this figure is expected to reach 1.2 billion people. Significant events have brought to light the disproportionate impact of disasters on older persons. In the earthquake that struck Kobe, Hyogo Japan in 1995, although predominantly older people (53%) died than any other group, they were also the ones who became volunteers who have shared their stories of survival and resilience since then.

Description: The presentation would mention older people’s vulnerabilities (e.g., of the 14,800 deaths in France during the 2003 heat waves, 70% were older people) but would highlight older persons as a critical resource for disaster risk reduction.

Lessons learned: From an urban health perspective, it is important to recognize the needs and capacities of older persons and to develop policies to promote emergency health care programmes. It is essential to assess and prepare for demographic and health trends that determine the shape of future emergencies. Although the Great Hanshin Awaji Earthquake is just one of humanity’s’ disaster experiences, disaster recovery has proven how powerful older people are in their story telling - motivating young people to think and act about effectively preparing for urban emergencies and the ways of coping if such would occur.
Next steps: There is a clear and urgent need to develop and/or strengthen integrated and comprehensive age-friendly multi-sectoral approach regarding consultation, inclusion and empowerment of older people. It is important to increase awareness amongst policy makers and practitioners on the growth in the number of older persons, the potential impact of emergencies and disasters, and the role that older people can play for urban disaster risk reduction.

02-09 Social capital and health and well-being of elderly Chinese immigrants in Canada
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Background: Literature has reported the relevance of social capital to health. However, little research has examined the social capital of elderly Chinese immigrants. This study examined the effect of social capital on the health and well being of elderly Chinese immigrants.

Methods: Data were collected through a personal survey with 1,537 Chinese immigrants 65 years of age and older in seven Canadian cities, randomly selected using Chinese surnames in telephone directories. A response rate of 77% was reported. The dependent variables were physical health, mental health, and life satisfaction, and they were measured by SF-36 and a single item life satisfaction measure. Social capital was represented by variables of political participation in voting, social contacts, organizational involvements, and attitude toward and ties with one’s own ethnic group.

Results: Factor analysis using principal component analysis was conducted, resulting in a four-factor model of social capital, including political asset, organizational asset, informal social tie, and attitudinal tie. Hierarchical regression analysis was used to examine the effects of the social capital factors on physical health, mental health, and life satisfaction. Attitudinal tie to the Chinese culture correlated positively with physical health. Organizational asset and informal social tie related positively to mental health. All social capital factors but political asset were positively related to life satisfaction.

Conclusions: Social capital factors were significant to health and well being. Policy makers and service providers should develop initiatives for improving the well being of elderly immigrants through enriching social capital in community ties and connections.

02-10 Using geographic information systems to inform policy development: The example of age-friendly New York City
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The New York Academy of Medicine has been a key player in efforts to make New York an “Age Friendly” City. This includes a Mayoral commitment to making New York “a city for all ages”, a perspective that reflects the benefits that this approach
can have for all residents, regardless of their age. The Academy has been asked to develop a blueprint based on a number of assessment activities to take this initiative forward. One key aspect of this process was the development of a comprehensive geospatial database of characteristics of NYC neighborhoods, with a particular focus on how these may impact on older residents. This will enable policy makers to better understand current trends, identify the communities most in need and help them prioritize future strategies. A Geographic Information Systems (GIS) approach was used to map these characteristics in a way that might be of use to policy development. Maps included population distribution; poverty in older adults; disability in older adults; proximity of buses and disabled access subways to concentrated populations of older adults; proximity to parks; collective efficacy (a measure of social capital); walkability; and sidewalk cleanliness. Where possible, maps were constructed at a census tract level. In some cases these were spatially smoothed to take account of neighboring features such as parks. This presentation will outline the development of this database and the challenges of converting this information to useful visual guides. Finally, we will summarize the findings of this initiative to describe the current age friendliness of New York City and suggest priorities for future action.

Best Practices in Meeting Urban Health Challenges

03-01 Behavior change: A tool to improve public health care systems
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Background: The public sector health system in Mumbai serves millions of urban poor. We conducted a study to examine the service utilization behavior of maternity staff to learn important reasons why communities prefer private services. Experience with the successful use of Appreciative Inquiry (AI), a behavior change method, in a large public hospital encouraged us to design a study using AI as an intervention for organizational change.

Method: The study was a 3 month case-control, “before-after” study of staff across 18 Maternity Homes of the city. 9 each were randomly assigned to intervention (n=368) and control groups (n=374). The following aspects were examined: “respect”, “concern and encouragement”, “communication with others”, “attitude to work and workplace”, “supportive supervision”. Data were compared across time using one-way ANOVA. Patient exit interviews were conducted, and repeated after 1 year.

Results: At the end of 3 months, there was significant improvement within the intervention group along “attitude to work and the workplace”. However, there was a significant deterioration in “respect”. The control group also displayed a significant improvement along “attitude to work and workplace” and “concern and encouragement”. The Patient Exit Interviews consistently showed significant improvement (F<0.05) in the perception of quality of care in the intervention group compared to the control group.

Conclusion: The experimental study showed mixed results. While the staff surveys were inconclusive, the patient exit surveys showed a definite improvement which continued over one year. There were limitations in the staff survey design. The scale used, while simple, left scope for missing information and misinterpretation. It was susceptible to bias given that the interviewers were also trainers. The patient exit
tool had none of these limitations. The patient respondents were unbiased, direct recipients of the service, lending greater weight to results. We believe there is evidence to support such interventions on a larger scale.

**03-02 Community risk pooling in urban slums of Agra to meet health expenditure**

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**Issue:** Urban poor living in suboptimal conditions are vulnerable to multiple health problems. Owing to poverty and irregular employment, they are short of resources for health emergencies leading to high indebtedness. To address this community risk pooling was promoted in Agra, Uttar Pradesh.

**Program description:** Community groups comprising 8–12 members each were trained by local NGOs since 2005. Groups initiated health funds with members collecting Rs.5 to 20/month. Rules were formulated by members through discussion facilitated by NGO worker. Formulated and documented rules comprise

a) consensus amount contributed per member,
b) prioritizing use of funds
c) rates of interest charged,
d) minimum collection before initiating loaning,
e) penalty for defaulters f) guarantors.

Groups were trained to maintain records of transactions and were encouraged to have a treasurer. Bank accounts were facilitated.

**Lessons learned:** As of February 2008, 79 of 98 groups collected Rs.384167. They have disbursed 568 loans amounting Rs.349776. 333 for health purposes while others for education housing, marriage etc. Groups have generated Rs.59237 as interest which ranges between 2% to 5%. 37 groups have bank accounts and efforts for facilitating more accounts are ongoing. Repayment is around 95%. Community based organizations with stimulation effectively generate, manage and utilize health funds for improving healthcare access and mitigating burden of debt.

**Next steps:** Through policy advocacy the approach has been included in India’s National Urban Health Mission and will be replicated in 430 cities.

**03-03 Comparative assessment of noise related health conditions prevalent among machinists in Ibadan, Nigeria**

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**Background:** Elevated noise levels constitute one of the most widespread public health threats in Nigeria. Studies have shown that despite the excessive noise levels machinists are exposed to, prevention is still lacking. This study assesses noise-related health problems such as tinnitus, ear pains and headaches prevalent among machinists in comparison with non-machinists in Ibadan.

**Methods:** A comparative cross-sectional design was used. Three major occupational sites involving machinists (resaw, food grinding and automobile repairing) were
selected for the study. Using simple random sampling process a total of 336 machinists was selected. A similar process was used to recruit 286 participants (mainly traders) who work 500–1000 meters away from each of the three sites as controls. A validated semi-structured questionnaire was used to interview the participants. Noise level measurements were also carried out using a sound level meter.

**Results:** Average noise levels measured in A-weighted decibels; dB(A) at the worksites of machinists were: resaw [100.5 dB(A)], grinders [99.7 dB(A)], auto mechanics [60.3 dB(A)] while their respective control areas recorded less than 70 dB (A) (P<0.05). Meanwhile, the occupational noise exposure limit recommended by World Health Organisation is 85 dB(A). Health problems or conditions reported by the overall exposure group (machinists) and their control group showed that 22.6% of machinists have tinnitus compared to their control group (12.2%) (P<0.05). Ear pains, headaches and severe tiredness were also prevalent among machinists. However, majority of the machinists reported hearing well.

**Conclusions:** Local machinists are exposed to noise pollution which is compromising their health status. Hearing conservation programme including health education interventions for local machinists is recommended in order to ameliorate the situation.

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**03-04 Culturally appropriate delivery of asthma management education via community health workers: Findings from a Chicago-based intervention**

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**Background:** Approximately 25% of children living in Chicago’s most disadvantaged communities have asthma, a rate twice the national prevalence (12%). The Sinai Urban Health Institute and Sinai Children’s Hospital developed and tested an innovative Community Health Worker (CHW) approach to improve pediatric asthma outcomes among African American and Latino children with severe asthma living in inner-city Chicago.

**Methods:** The model utilizes CHWs recruited from targeted communities to deliver case-specific asthma education via three home visits over six months with the goal of improving asthma self-management, thereby reducing asthma symptoms and health resource utilization. Data is collected at baseline and each month for one year. Preliminary findings based on six months of follow-up data will be presented.

**Results:** African American and Latino participants differ in effective recruitment strategies, participation rates, retention, and family needs. Although African Americans have more severe asthma at baseline as evidenced by greater symptoms, asthma attacks and urgent health resource utilization frequency, Latinos seem to be more receptive to participating in the program. By 6-months, both populations showed significant decreases in health resource utilization (p=0.02) and symptom frequency (p=0.001), with no significant differences in effect size by race/ethnicity.

**Conclusions:** A CHW model is an effective means of delivering culturally appropriate asthma education to children and their families living in disadvantaged urban communities. Although Latinos’ and African Americans’ receptiveness to the model differs, both groups benefitted significantly from the program. This study lends power to critically look at these unique populations, offering insight into the delivery of culturally appropriate disease management programs.
03-05 Development equity assessment indicators in urban areas; Empirical methodology framework

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Background: Inequalities in health and its social determinants exist in most of the societies, which impose worst consequences on the poor and disadvantaged groups. Good governance indicates reducing disparities, in particular responding to health needs of the people, however, identifying the gaps to build an equitable city is hard to reach. This study plans to develop a tool to assess health equity in urban areas.

Methodology framework: Based on an available tool which was developed and offered by the WHO Kobe Centre, consensus meetings of academia, experts, municipal authorities and all relevant development sectors were established during Jan-May 2008 in four areas named: infrastructure, social and humanity development, economic, and governance. Two more domains were added as 'health' and 'nutrition', which raised the total number of indicators to 65. Most of these indicators are for the first time ever been monitored in an urban area in such a large population-based survey such as mental health, social capital, quality of life, smoking, violence, disabilities, Fair Financial Contribution Index, Calorie deprivation, Human Development Index, responsiveness, satisfaction, and social contribution. Then variables required for each indicator were identified and relevant questions were developed subsequently. The main questionnaire was finalised and piloted then administered in a large (21500) randomly selected clustered sample within all 22 districts in Tehran during June-Sep 2008 to find out disparities within wards.

Implications: Preliminary data will be presented in the congress. This framework makes a valid basis for further evidence-based decision making for disparity and inequality reduction in urban areas.

03-06 Establishing basic antenatal, postnatal, and neonatal (APN) services at the primary level: The process and challenges

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Issues: India’s commercial capital, Mumbai, has a well established, extensive state run health system. Nevertheless, primary level health posts serving large slum communities suffer from deficient infrastructure, human resources and access. Basic APN services are non-existent. India’s commitment to the Millennium Development Goals of reducing child mortality and improving maternal health, makes strengthening primary health care via the establishment of sustainable basic services a critical point of intervention.

Description: The intervention forms part of the wider City Initiative for Newborn Health, which partners with the health system via multiple demand and supply side interventions. After a situational analysis of 50 health posts, 14 were selected for intervention. Establishment of basic APN services involves certain key processes: formulation of clinical protocols jointly with health system representatives, infrastructure and equipment upgrades, and clinical and Behavior Change Communication
training to health post staff. Antenatal clinics have begun in 6 health posts, conducted entirely by staff. Support from the project team involves continuous motivation, sharing of data, and on-going capacity building.

**Lessons learned:** Three years into the project cycle, and as a pioneering initiative, the team has had invaluable insights. Change is possible, but can be an arduous and challenging process in a large, bureaucratic public sector health system with multiple priorities and limited resources. Support from the system and its leadership play a critical role. The experience of establishing services within structurally similar health posts can be very different, offering new process learnings each time and streamlining the core process.

**Next steps:** The objective of the project is not only to complete clinic establishment in its intervention area but also to sustain the process and replicate clinic establishment in health posts across Mumbai. To this end, documentation, sharing of process learnings and achievements, and collaboration with the health system is an ongoing process.

03-07 Estimated number of overdose deaths averted by a supervised injection facility in Vancouver, Canada

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**Introduction:** In many settings, illicit drug overdose remains a leading cause of premature death. We sought to estimate the number of deaths averted by the implementation of a medically supervised safer injection facility (SIF) in Vancouver, Canada.

**Methods:** The number of averted deaths was modelled using published estimates of the non-fatal to fatal overdose ratio. Model inputs were derived from overdose death case files at the local Coroners Service and non-fatal overdose rates at the SIF. Non-fatal overdoses were defined as events requiring the provision of Narcan, a 911 call or an ambulance response. Point estimates and 95% Confidence Intervals (95% CI) were estimated using a Monte Carlo simulation.

**Results:** Between March 1, 2004 and February 6, 2008 there were 885 overdose events in the SIF (1 every 787 injections), and zero deaths. In 2004 and 2005, there were 23 and 22 overdose deaths in the neighbourhood surrounding the SIF. Because of the wide range of non-fatal overdose rates reported in the literature we performed a sensitivity analysis using rates of 50, 200 and 300 per 1,000 person years. Given these model inputs, the number of averted deaths were, respectively: 37.9 (95% CI: 16.7–59.1); 9.4 (95% CI: 7.2–11.7); and 6.3 (95% CI: 4.8–7.7).

**Discussion:** Based on a conservative estimate of the local ratio of non-fatal to fatal overdose, the 885 overdoses in the SIF during the study period might have resulted in between 6 and 38 deaths had they occurred outside the facility.

03-08 From silos to systems: Integral capacity building - A model for healthy municipal governance

J. Mucha

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**Issue:** Using an Integral Capacity Building Model to build capacity for healthy municipal governance.

**Description:** There is no “one size fits all” approach to building healthy, sustainable communities. As communities are learning about, responding to and adapting to
complex community issues, they are also seeking ways to include the multiple viewpoints, perspectives and assets that can build a shared understanding of the issues they are faced with and the best direction forward. “We can’t solve our problems at the same level of thinking which created them”....so what will help us take our thinking and actions to the next level?

Building capacity for healthy municipal governance that supports making links between the multiple determinants of health is no easy feat. The challenge requires communities to deal with diverse interests, priorities and needs. It requires communities to develop the capacity for meaningful dialogue, collaboration, learning and action across disciplines and sectors. It requires a commitment to using an integrated approach.

This presentation will illustrate how the BC Healthy Communities capacity building model is informing capacity building for healthy municipal governance through supporting communities to enhance social, environmental, economic, physical, psychological, spiritual, and cultural capacity to address the potential of the whole person within the whole community. The presentation will also illustrate the importance of focusing on

1. Community learning
2. Community engagement
3. Expanding community assets and
4. Community collaboration

Lessons learned: Political commitment, healthy public policy, community engagement and inter-sectoral partnerships are key building blocks for addressing the multiple and interconnected determinants of health. This presentation address capacity needs for each.

Next steps: BC Healthy Communities will continue to collaborate with various groups across the province to use a health lens for municipal policy as well as foster inter-sectoral work to development healthy communities through building community capacity.

03-09 Health equity in the urban context: A review of assessment and response tools
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Background: Since 2007, half of the world’s population has been living in urban areas. The impact of urbanization on population health, health equity and the environment is a key concern for national and municipal authorities. The Declaration of Alma Ata advocated for the reduction of health inequities between countries. However, health gaps also exist between different population groups, and across different social strata. A successful response to the opportunities and challenges of urbanization therefore requires an understanding of all the factors that influence equity globally and locally.

Methods: Through a literature review, we identified the major health equity assessment tools currently available, reviewed their respective advantages and disadvantages and assessed the ability of these tools to improve health and equity for urban populations.
Results: Seven relevant tools were identified. Although each tool had certain unique characteristics, there was a common understanding of the critical factors affecting urban health. Six tools focused only on assessing the urban health situation with a comprehensive list of indicators, while the seventh also considered response strategies. The benefits of linking response as part of urban health equity assessment were also discussed.

Conclusions: Key urban issues appear to be similarly understood across existing tools with minor differences based on perspectives. A number of indicators have been identified related to these issues. However, evidence at the local level still seems to be scarce and the tools may have been weak on involving communities and linking evidence to decision-making. Based on the available information and apparent gaps, a list of fundamental characteristics of tools to assess and respond to urban health inequities is identified in this review.

03-10 Health providers against poverty: Evidence and interventions

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Issues: Poverty is a key determinant of health - it has a dramatic impact on individual and community level health risks and indicators. Health providers are well positioned to intervene, address, and prevent the health effects of poverty.

Description: Health Providers Against Poverty (HPAP) has expanded the role of health providers by developing new partnerships, interventions, and approaches to addressing poverty as a determinant of health. We describe a reproducible, innovative and multidisciplinary health services approach to poverty as a health issue. The presentation will be grounded in over two years of experience, focusing on key examples of action, such as “Special Diet Clinics” which are aimed at promoting access to a little known provincial subsidy for social assistance recipients with chronic illness.

Lessons learned: We will explore best practices and lessons learned through HPAP’s advocacy and partnership building initiatives with non-governmental organizations and health provider alliances, and describe how HPAP has been able to advance the public policy debate in Ontario around poverty as a key determinant of health.

Next steps: We will discuss HPAP’s new directions, including interdisciplinary and community-based research and new partnerships linking healthcare to antipoverty work in Ontario.

03-11 Leveraging community power to mobilize government funding to address a silent epidemic: B free New York City (NYC)

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Chronic hepatitis B (HBV), which can lead to liver-related diseases and liver cancer, disproportionately affects the Asian American community, which has an eight-
ten-fold risk of developing chronic HBV compared to the general population. This presentation will describe the advocacy and mobilization efforts of a coalition of healthcare providers, professional and volunteer associations, media, and community-based organizations that worked with the City Council of New York to gain City-funding for a large-scale, four-year effort to address the HBV epidemic among NYC Asian Americans. Through intensive educational efforts with city council members representing districts with a high proportion of Asians, this multi-million dollar award has provided screening, vaccination, education, and treatment for HBV. To date, the NYC Asian American Hepatitis B Program screened more than 8900 individuals for HBV, vaccinated more than 1900 people at risk for infection, and medically evaluated more than 1100 persons identified as having HBV. In concert with the New York City Council and NYC Department of Health the program is expanding its reach to recent, non-Asian immigrant populations that are also at higher risk for HBV. The program also has leveraged its local policy successes to implement national policy, including the introduction of the first ever Federal bill to set aside specific funds for HBV testing and treatment in affected communities. This presentation highlights the challenges, lessons learned, and experiences of the coalition to work with elected officials to develop a comprehensive community-based health program for a minority community.

03-12 New developments to prevent discharges to “no fixed address”
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The discovery that almost 200 individuals are discharged from psychiatric wards to shelters each year in London, Ontario led to the creation of a phase 1 pilot project addressing this problem. It consisted of an intervention process, changing policies related to housing and start-up fees for a select group Ontario Works (OW) recipients and Ontario Disability Support Program (ODSP) recipients and providing immediate access to a housing advocate. The intervention was successful; the seven participants receiving the intervention were still housed six months later, while six of seven participants receiving usual care were still homeless. The proposed presentation focuses on the phase 2 pilot’s preliminary results, which involve LHSC and RMHC. For phase 2, OW linked a person directly to the acute care psychiatric ward in London. They assist any OW applicants/recipients on the ward who require income and housing support. ODSP has identified a key contact for the ward and a Canadian Mental Health Association housing advocate helps clients find housing. This phase includes direct computer linkage between the external agencies (OW & CMHA) and the hospital. Of the initial 30 in-patients at imminent risk of homelessness who accessed the service, 27 were discharged to homes rather than
shelters or NFA. The remaining three came from shelters prior to admission but were linked with new services through the project. In spring 2008, this pilot extends to RMHC. This project demonstrates the importance of looking at issues related to community integration from a cross-sectoral perspective to address complex needs.

03-13 Public health interventions to reduce urban health inequalities during heat episodes

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Background: Public health interventions aimed to mitigate the adverse effects of heat on health can reduce urban health inequalities. The objectives of our research were: (i) to describe the diverse types of interventions currently implemented in Canadian urban centres in response to heat episodes, (ii) provide evidence of their effectiveness and, (iii) identify gaps in current knowledge and directions for future research.

Methods: The peer-reviewed literature was searched using the databases Medline, PreMedline and Scholars Portal. For the grey-literature, we used a combination of strategies including internet searches and personal communication with public health practitioners and policy makers. This research considered three categories of public health interventions for heat: (i) identification of a lead agency, (ii) heat health warning systems, and (iii) interventions in a heat response plan.

Results: A range of public health interventions for heat are used across Canada. These include those aimed at the general population as well as those targeted specifically at vulnerable populations. The strengths and weaknesses of these interventions will be discussed in this presentation. The adoption of interventions needs to be tailored to the local community of implementation, regardless of which interventions are used. Minimal work has been done to evaluate the effectiveness of these measures, particularly in vulnerable groups such as the elderly and the homeless.

Conclusions: Assembly of information on current public health interventions for heat episodes adds value to current knowledge. Developing a framework for evaluating public health interventions for heat would be an important step to build on the findings of this work. These criteria could then be applied to a selection of public health sites that have heat interventions in place to assess their utility and provide much-needed information to practitioners and policy makers in this increasingly important area of environmental health.

03-14 Time kit: Addressing time impacts of health and environmental intervention

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Background: Despite the twin benefits for their health and the environment less than 5% of Australians walk to work each day, and only 1% cycle. Why hasn’t behaviour change occurred on anything like the scale required? People need time to keep healthy, to exercise, maintain strong social bonds, and prepare nutritious
meals. But increasing work hours have diminished free time, a pattern that is compounded for parents and others who combine working with caring. The Timekit aims to give health, environment and urban policy makers ways to understand, assess and address the time dimensions of their intervention options and objectives.

**Methods:** Methods are based upon four case studies of initiatives underway nationally and internationally. We interview urban intervention designers and implementers, to gather details on why and how they addressed time costs, thereby developing a set of practical examples and precedents.

**Results:** We identified three approaches for addressing time in health or environment interventions: reducing time burdens of the intervention itself (e.g. walking school buses that save parents’ time), freeing up time to encourage healthy and sustainable behaviour (e.g. urban layouts that reduce time to walk or travel; altering the way municipal services are accessed and delivered) and enhancing the quality of time (e.g. making areas safer and more attractive to walk in).

**Conclusion:** It is possible to address time impacts of health and sustainability interventions, and our case studies reveal methods for doing so. Further work is needed to evaluate the extent these methods improved policy outcomes.

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**03-15 Toronto’s MDOT: Multi-Disciplinary Outreach Team - Innovative approach to engaging and assessing the absolute homeless**

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**Issues:** Toronto’s Street Health Report of 2007 found a high prevalence of poor mental health status among the homeless people they surveyed and 74% reported having at least one serious physical health condition and 52% of the total sample had two or more.

**Description:** Toronto’s outreach providers identified a group of individuals living outside with complex needs who were not being served by existing services. The Multi-Disciplinary Outreach Team (MDOT) was developed in November 2006 to address these barriers. The program is a unique and innovative collaboration between non-profit organizations, health care institutions and the City of Toronto. The team is comprised of outreach workers, a nurse, a housing worker, two part-time psychiatrists and a concurrent disorders specialist. We work with the most marginalized of homeless clients: those living outside, suffering with mental, physical health, developmental and substance use issues. We provide engagement, assessment and interim case management while longer-term supports are put into place.

**Lessons learned:** MDOT has just completed its first evaluation and the quantitative and qualitative results have been significant both in terms of increased health and in quality of life. The Centre for Addiction and Mental Health (CAMH) coordinated the quantitative research using seven different assessment tools at both the baseline and after six months of working with the MDOT Team. Compared to baseline, at six months there was a greater proportion of clients with increased annual household incomes and two-thirds of the clients were now housed. Other scores indicated over half of MDOT clients were either functioning in the community with medium or high levels of ability at the six month mark.

**Next steps:** Disseminating our unique style of engagement, outreach and assessment to other organizations, and the team would like to expand its role to address ongoing gaps in care.
03-16 Urbanization Influence on Health Quality in Albania

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Issues: Albania is rapidly urbanizing: 30% of the population lived in urban areas in 1985, 70% in 2005, and an estimated 90% will live in cities by 2050. We consider the scenarios that relate the complexity of economic and environmental factors with health dimension of urbanization in Albania with the aim of highlighting some negative, unintended consequences and legacies that excessively constrain future options.

Description: Despite the abundance of urban health indicators, we have found a number of limitations when using this information in our comparative analysis methodology. Often the delineation between rural and urban is arbitrary, and several definitions of inclusion may be employed for a given city. We found that the prevalence of diabetes is much higher in the urban population (11.7%) than rural (6.5%). Similarly, hypertension is more common in urban (16.4%) than in rural areas (10.2%). The difference in prevalence of obesity, cholesterol, etc. in urban areas and rural areas appears to be significant too.

Lessons Learned: With the use of a more accurate categorization of urban areas in Albania, residence was found to be a significant factor for urban health. There are some unobserved features of urban populations that increase health risk which are related to lifestyle factors or employment.

Next Steps: The pace and style of urbanization in Albania have increased human exposure to a number of health risks. The dynamics of urbanization is driven by several factors that need to be addressed: the quality of consumption, production, and economic growth; a city’s ability to cope with population growth; relations between ecosystems and land use patterns; and governance arrangements.

03-17 Use of participatory action research methodology in disaster research

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PAR team members: E. Alpert, T. Canavan, J. Francis, D. Kelly, P. Miller, J. Pelletier, E. Schmitt, F. Zauderer¹

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Background: Participatory action research (PAR) methodology has been extensively and effectively used in occupational and public health research to identify and implement risk-reduction interventions. This methodology has not yet, to our knowledge, been applied to disaster research. A PAR framework was incorporated into the World Trade Center (WTC) Evacuation Study to identify the individual, organizational, and structural (environmental) factors that affected evacuation from the WTC Towers 1 and 2 on September 11, 2001. The effectiveness of this approach was assessed using process and outcome evaluation methods.

Methods: Two PAR teams, comprised of WTC evacuees, study investigators, and expert consultants, jointly developed recommendations to facilitate evacuation from high-rise office buildings and reduce risk of injury among evacuees. These teams worked first separately and then collectively to identify data-driven strategies for improvement of high-rise building evacuation.
**Results:** PAR methodology was an efficient and effective way of identifying interventions at the individual, organizational and structural (environmental) levels to improve the safe and rapid evacuation of high-rise occupants.

**Conclusions:** Forty-two recommendations targeting organizational risk factors, 22 recommendations at the structural level, and 19 recommendations for individuals were identified. Interventions were aimed at emergency preparedness and safety climate improvements. This approach may also be effective for other workplace disaster prevention planning and response programs.

**Community Approaches to Urban Health**

**04-01 Addressing the social context of hypertension management by engaging community through photovoice methodology**

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In this study, we address the social context of hypertension management among minority and low income inner city residents. We identify the social factors that either act as a barrier or as an asset in the lives of hypertensive patients in managing their blood pressure. Twenty patients with poorly controlled hypertension were randomly selected from three community based health clinics. Social and economic indicators of the neighborhoods served by these clinics reveal a population that is primarily African American, poor, and with low educational attainment. We used an innovative research methodology known as Photovoice to engage the participants in research. Photovoice goes beyond traditional focus groups by incorporating picture taking and group discussions of specific pictures as they relate to the research question, which in this case was to determine the social contextual factors of hypertension management. The photovoice training sessions allowed the participants to brainstorm about the issues related to hypertension before they went to tell their story through pictures. The discussion of pictures gave them a chance to critically reflect on their environment, community, lifestyle, culture, social support, economics etc. Based on the pictures and the discussions, we developed the themes that identified the multiple and varied factors that influence the patient’s ability to control their hypertension effectively. To guide the research, we also formed a community advisory team with community residents and other community stake holders. In this presentation, we will discuss the feasibility and rewards of utilizing this particular method, Photovoice, to capture important and visually powerful themes related to hypertension control. We will also discuss Photovoice as a framework for community engagement and capacity building. Most importantly, we will talk about some of the challenges that we encountered while conducting Photovoice research both in general and with the specific target community.
04-02 Augmenting negotiation capacity of community leaders for delivery of health and related services
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Issues: Urban poor population living under compromised environment and poor health access is increasing rapidly in India. Community Based organizations (CBOs) have strong local roots, understand challenges and can address them effectively. The approach of augmenting negotiation capacity of community leaders was undertaken at Indore, Madhya Pradesh.

Program description: The program is based on the principle of building leadership among slum community groups and connecting them to health and other service providers. Lead CBOs (LCBO) are groups of socially active slum based women involved with slum development programs in Indore before initiation of the Program in 2003. These teams were identified and trained by NGO partners to effectively address determinants of health and related challenge issues. Each LCBO covers a cluster of 15000–25000 population (total population 150,000). Nine LCBOs negotiate and coordinate with government and private providers for improved health services. They help establish referral linkages and facilitate transport and receipt of services. They monitor, supervise and support slum based groups. They mobilize, utilize and conserve local resources. Seven have been registered as voluntary organizations. During Jan-07 to Dec-07, along with regular MCH services, LCBOs ensured water connection in 1200 households, community-level water system for 15000 households, individual toilets for 775 households, Government Maternity benefits for 422 women, entitlement cards for subsidized food for 2179 families and health entitlement for 5746 families.

Lesson learned: Leadership development is effective, replicable and adaptable. LCBOs serve as a long term resource to the urban poor community.

Next step: Context appropriate replication.

04-03 Being the change: A participatory women’s group intervention to improve maternal and newborn health and survival in the slums of Mumbai
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Issues: We are testing an innovative, group-based approach to improve maternal and newborn health care behavior and outcomes in vulnerable slums of Mumbai. The aim is to develop a low-cost, sustainable and replicable model.

Description: Group work focuses on potentials rather than problem-solving, a model based on the belief that positive group processes have the potential to energize genuine progress and sustain growth. 24 trained facilitators (sakhis) support 2817 women through fortnightly, alley meetings of 238 women’s groups in 24 slum areas. The sakhis use an adapted Appreciative Inquiry approach (a change methodology
involving definition, discovery, dreaming, design and delivery) in which women explore health issues through sharing personal experiences, gain new knowledge, discover the strengths in group members, families and neighborhoods, distill new insights into a group dream for maternal and newborn health in their community, design strategies to realize this collective dream, and evaluate their implementation.

**Lessons learned:** Positive, process oriented group work is feasible in slums to empower women at the individual and group level by building trust, self confidence and understanding; and by providing access to health related information, creating group bonding and mobilizing support from the community. Sakhis need to be empowered to be able to facilitate change in their communities. Local strategies evolved by group members argue case for community driven health services.

**Next steps:** Building the capacity of the sakhis to replicate the participatory process should contribute to sustainability, as may activation of community health committees.

**04-04 Building healthy communities and enriching learning by stepping out of the classroom**

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**Issues:** There has been a growth in the use of community service-learning (CSL) in post secondary institutions as a pedagogic model for urban health studies. CSL is used as a framework for community-university engagement, combining service and academic work with the aim to improve the health of communities and to increase civic engagement among students.

**Description:** Our presentation uses case studies of community-based interventions employing CSL and community based research in Vancouver’s inner city. These projects include: an urban agriculture and nutrition program for children, a physical activity intervention for people living with HIV/AIDS and a harm reduction research project working with women in the survival sex trade.

**Lessons learned:** Evaluations of these CSL interventions show positive outcomes in terms of community and student engagement, student learning and improved health and well-being of the involved community.

**Next steps:** We will discuss the challenges faced from the university and community perspective and suggest ways in which these can be minimized. We will also discuss the necessary requirements for successful implementation of CSL to urban health initiatives.

**04-05 Community and cultural resources in case management for Aboriginal populations who experience concurrent mental health and substance abuse: A realist approach to synthesizing evidence**

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**Background:** Aboriginal peoples living in Canada have been identified as experiencing a disproportionate burden of both mental health and substance abuse issues
compared to non-Aboriginal peoples. In collaboration with the Ontario Federation of Indian Friendship Centres (OFIFC), we aimed to describe effective models of community-based case management for concurrent disorders (CD) among Indigenous populations and to apply these findings to a locally-sensitive strategy that will guide decision-making, policy and program development, and best practices among OFIFC’s multiple urban sites.

Methods: Utilizing Pawson’s (2006) “realist review” approach, we reviewed and synthesized scholarly publications and grey literature and conducted interviews with frontline health workers, program managers, and policy analysts. We focused on the successes and failures of interventions in an Indigenous context and identified the most relevant mechanisms driving treatment and program outcomes.

Results: Based on preliminary findings, programs that provide individuals with the option of Western therapy and/or traditional healing practices are most beneficial for Indigenous peoples with CD. In addition, interventions which emphasize a holistic approach to physical, mental, emotional, and spiritual wellness; recognize and address the impact of past and current trauma; and involve peer-based models of care and recovery were linked to positive outcomes.

Conclusions: Realist review is an effective methodology for synthesizing complex information as it draws upon multiple sources of research and diverse lived experiences. This non-conventional method, coupled with the participatory engagement of a community partner, is an appropriate fit with Indigenous approaches for building knowledge and producing evidence. Implications for policy and practice within the Canadian Indigenous context will also be discussed.

04-06 Community-based services for homeless adults experiencing concurrent mental health and substance abuse disorders: A realist approach to synthesizing evidence

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Background: Consultations with community-based service providers identified a lack of knowledge about successful interventions that address the needs of clients experiencing concurrent mental health and substance use disorders (CD). This study developed a collaborative research effort between the Centre for Research on Inner City Health and five community-based organizations in downtown Toronto to:

1) identify community-based interventions for homeless adults experiencing concurrent disorders (CD); and
2) apply research findings to each organization via tailored dissemination strategies in order to guide decision-making, program development, and best practices.

Methods: Following Pawson’s (2006) “realist review” approach to synthesizing evidence, we reviewed scholarly and non-academic literature on community-
based interventions for homeless adults experiencing CD and conducted interviews with service providers. In addition to noting intervention successes and failures, we placed particular emphasis on program contexts and mechanisms in order to identify program elements most relevant for treatment process and outcomes.

**Results:** Based on the review, beneficial programs for homeless adults with CD are those that:

(i) provide integrated mental health and substance use services;
(ii) utilize client-driven approaches that value consumer choice;
(iii) address housing concerns separately (e.g., not requiring clients to “earn” housing by abstaining from substance use); and
(iv) focus on building trusting relationships between service providers and clients.

**Conclusions:** Realist review is a useful methodology for synthesizing complex programming information on community-based interventions for homeless persons with CD. Benefits and challenges of the research process as well as knowledge translation activities and tailored projects for each community-based organization will be discussed.

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**04-07 Documenting evidence of diabetes disparities among South Asians in New York City**

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**Background:** In the U.S., South Asians are seven times more likely to have type 2 diabetes than the general population. Despite being home to the largest South Asian population in the U.S., few studies have documented diabetes disparities among this community in New York City (NYC). Preliminary findings will be presented from a larger intervention study that seeks to implement a community health worker (CHW) program designed to improve diabetes control in the South Asian American community of NYC. This is a community based participatory research (CBPR) study that involves a collaboration between diverse community, academic, and medical stakeholders. During phase one of this study, findings from a community survey are being integrated with patient outcome data from NYC’s largest municipal hospital (Bellevue), which sees a large South Asian patient population.

**Methods:** Interviewer-administered surveys were completed by a community sample of South Asians recruited from community based events (n=300). Patient data was drawn from the Diabetes Clinic of Bellevue (n=4700).

**Results:** Results from the community survey reveal that 67% of South Asian respondents had ever been screened for diabetes, and 17% of those screened had been told by a health professional that they had diabetes. This rate of diabetes is almost 3 times higher than the rate reported for Asian Americans living in New York City (6%). Preliminary analysis of patient hospital data reveals approximately 10% (n=514) of the diabetes clinic population is South Asian. Among diabetic South Asians, 65% are male. 59% of South Asian patients have Hemoglobin A1c levels above 7, indicated uncontrolled diabetes.

**Conclusions:** Results will guide the development of the diabetes CHW intervention for this population. Results will be assessed by a coalition of community partners and will be used to develop an appropriate CHW training curriculum. Implications for CBPR best practices will be discussed.
**04-08 Evaluating the community food action initiative - A population health approach to food security**  
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**Issue:** Chronic diseases are an increasing burden on Canada’s health care system. In 2003/04, direct costs of diabetes care alone cost British Columbia’s (BC) healthcare system close to 1.04 billion dollars. Evidence suggests that healthy eating combined with other lifestyle changes are preventative measures against a range of chronic diseases. Yet, healthy eating is impacted by many socio-economic, political and cultural factors. Evidence suggests that health promotion strategies are more effective at addressing these factors.

**Description:** This session will provide the lessons learned from a process evaluation of the Community Food Action Initiative (CFAI) - a health promotion initiative aimed at addressing the systemic issues of healthy eating. Funded by the Ministry of Health, implemented by BC’s five regional health authorities and coordinated by the Provincial Health Services Authority, CFAI provides funding and supports to communities to take local action. In operation for the past three years, CFAI has supported a myriad of urban and rural projects across BC communities; ranging from planning for local food security (food forums, assessments and action plans) to emergency food provision (food banks and gleaning programs), capacity building (community kitchens, gardens and farmers markets), redesign of the local food system (producer cooperative) and policy initiatives.

**Lessons learned:** The evaluation provides evidence that CFAI is a successful model. It also illuminated the complexities of evaluating a multi-faceted health promotion initiative and reinforced the possibility of obtaining valid results from evaluating health promotion activities that are varied and not prescriptive. The need for a consistent evaluation and monitoring framework for diverse community based actions were also underscored.

**Next steps:** Having concluded the evaluation in April 2008, analysis and planning continues to identify next steps.

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**04-09 From Flying Toilets To Paid Ablutions: Innovations For Improving Urban Sanitation In Kibera Slums - Nairobi, Kenya**  
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**Issues:** The growth of urban slums as a result of rural-urban migration in Africa is increasing. In Kenya’s capital Nairobi, over 60% of the residents live in slums. The slums are extremely deficient in sanitation infrastructure such as toilets. The state of sanitation and squalor has led to the rampant spread of communicable diseases. The study explores innovations adopted by residents of one such slum, Kibera to address the problems of sanitation.

**Description:** Households without toilets use polythene bags as toilets. These bags are thrown onto the passages to be treaded upon- flying toilets. In response to this specter, residents have come up with innovations in the form of construction and
management of community owned ablution blocks that are used at a fee, raising about Ksh. 7,000, a USD 100 equivalent a week.

**Lessons learned:** These blocks have not only improved sanitation but have also provide income for the poor. Community-driven interventions can improve sanitation in urban slums. It is possible to deal with flying toilets in the presence of the necessary support structures. However, ethical questions arise as to whether the poor should pay for basic services such as toilets. With the capacity of the government to provide such services extremely constrained, can such innovation be allowed to thrive?

**Next steps:** It is important to consider the cost of human waste disposal for the poor and necessary partnerships to improve sanitation in urban slums. However, there is need to explore the sustainability of such innovations. Can they be out-scaled to address the problems of sanitation in such settings?

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**04-10 Increased community based services could explain the decline in mortality among Montréal street youth**

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**Background:** According to two consecutive cohort studies (1995/01 to 2001/03 (Coh1); 2001/07 to 2005/12 (Coh2)), mortality rate among SY has significantly decreased from 921/100,000 person-years to 191/100,000 person-years. Two hypotheses were tested.

**Methods:** H1) mortality declined similarly in the general population; H2) mortality predictors were distributed differently in Coh1 and Coh2. H1): we computed the number of expected deaths and the standardized mortality ratios (SMR) and their 95% confidence interval (CI) using Byar’s approximation in both cohorts. Annual mortality rates of the Québec general population between 1995 and 2006 were used. H2): multivariate Cox regression analyses were conducted on the combined data base to examine the effect of participation in Coh1 on mortality, controlling for the independent predictors of mortality identified in Coh1.

**Results:** Mean age and sex distribution were: 19.9 years, 67.4% male (Coh1); 20.4 years, 68.9% male (Coh2). The number of expected deaths showed a decrease of mortality rates of 19% in the general population. However, the SMR for Coh1 was significantly higher than for Coh2 (11.6; CI: 7.6–17.0 vs 3.0; CI: 1.0–6.9). The decrease was thus more important among SY. According to the multivariate analysis, Coh1 participants were 6 times more likely to die during follow-up than Coh2 participants (Adjusted Hazard Ratio: 6.2 (CI: 1.9–20.4)).

**Conclusion:** Decreased mortality cannot be explained by our hypotheses. Another plausible explanation is the public funds invested in 2000 to improve services for SY, including increased hourly coverage of outreach community interventions and the opening of a low-threshold primary care clinic.
04-11 Innovative community engagement strategies to improve youth sexual health in unique urban environments
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Issue: Remote, urban communities in Northeastern British Columbia, Canada are undergoing rapid in-migration of young, primarily male workers in response to an economic ‘boom’ in the oil/gas industries. Chlamydia rates in the region exceed the provincial average by 32% (e.g., 294.6 cases per 100,000 persons compared with 213.3). Evidence indicates that social and structural determinants of young people’s sexual health are key to consider in the design of interventions.

Description: An action-oriented internship was undertaken to develop a set of community-based interventions to promote STI testing and prevention among youth. This project was informed by ethnographic research, designed in concert with community leaders, service providers, and youth, and implemented through a partnership between government and an NGO. This project resulted in the development of a tailored STI testing awareness campaign and STI testing and prevention outreach kit for use with oil and gas workers in cities, remote work sites, and camps.

Lessons learned: In this unique urban and remote environment, the influx of oil/gas industry workers has created a complex intervention setting. The STI control interventions developed for use in this context illustrate the promises of community-based and led sexual health intervention approaches that attend to the needs of local youth.

Next steps: Future STI prevention should consider the diverse and unique needs of such populations of youth. More broadly, community-based interventions undertaken in partnership with local youth and service providers, government, and NGOs are feasible opportunities to translate research into relevant public health practice at the local level.

04-12 My neighbourhood, my voice: Photovoice as a catalyst for community action
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Background: “Photovoice” is a participatory action research methodology based on the understanding that people are experts in their own lives. People create and discuss photographs to catalyze personal and community change through active assessment, neighbourhood level planning, and local action. A pilot photovoice project was conducted in Ottawa, Canada to learn about neighbourhoods from the perspective of the youth who live in them. The main goals were to give each community a voice for change and to provide an outlet for creativity for the youth.

Methods: Seventeen youth and two adults from three lower income, multicultural neighbourhoods participated in this community-university collaborative project. We held photography workshops run by two experienced photographers. Each of the
four groups of participants was given two digital cameras to document life in their neighbourhood. They focused on positive aspects of their neighbourhood and the aspects that they would like to change. One photograph was selected from each and the participants wrote a paragraph describing the photograph.

**Results:** Qualitative analyses of the paragraphs highlighted the positive aspects of the neighbourhoods and the aspects that needed to change. Positive themes included a sense of safety, opportunities for recreation, and a concern for younger children. The most common themes for change included poor and unsafe conditions and a lack of pride in the neighbourhood. Important concerns were vandalism, poor housing conditions, littering, low lighting, and poor maintenance of play structures and walkways.

**Conclusions:** Both positive and negative themes emerged in the paragraphs, although negative themes were more common. Several positive outcomes resulted from the pilot project, including participants’ enjoyment and pride in their photographs, increased garbage collection and better lighting in the neighbourhoods, and a new playground for one neighbourhood. Based on the success of the pilot project, we are currently embarking on a city-wide photovoice project.

**04-13 Peer approach key to improving commercial sex workers’ (CSWs) sexual health**

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**Issues:** Many programs only provide information and condoms, a few employ approaches that control and contain HIV/STD’s among CSWs through clinical services, IEC and condom promotion as well as peer education.

**Description:** Rakai Community Development Trust (RACDET) learned that CSWs were the best agents for change to fight HIV/AIDS among themselves. This strategy required many changes in the lives of CSWs and their working conditions. Their human dignity had to be recognized, their occupation accepted as a valid option and hence they had to value their lives and look forward to a meaningful future as legitimate citizens in a healthy society. Given the asymmetrical power relations within the sex industry and the women’s social exclusion, the only way CSWs could gain greater control over their own bodies, sexuality, income, health and lives was through mutual support, collective bargaining and united action.

**Lessons learned:** Beyond condom social marketing, the following elements should be addressed as well;

- Establishment of good links with community resource persons to win acceptance and CSWs trust.
- Peer involvement is a key strategy for successful project development.
- Making the project permanent allows a functional referral system
- Employing participatory approaches provides a basis for hopeful perspectives for the future.
- Adopting a service package contributes to the personal development of CSWs.

**Next steps:** Ownership of services and assets ought to be effectively transferred to CSWs’ communities themselves to foster sustainability.
04-14 Photovoice: An important tool to document social determinants of cardiovascular health in the Filipino community of New York City and Jersey City
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Background: Project AsPIRE, a community-based participatory research project funded by the National Center for Minority Health and Health Disparities, aims to improve health access and status for cardiovascular disease in the Filipino American community living in the New York and New Jersey area. The project sought the use of innovative and community-based methods to enhance understanding of the community needs and resources.

Methods: To capture the breadth and depth of the Filipino’s community’s perspectives on heart health, photovoice was used as one component of Project AsPIRE’s needs assessment. Photovoice enables participants to identify, represent, and enhance their community through a specific photographic technique. The goals of photovoice include enabling people to record their lived experiences, promoting critical dialogue and discussion around their photos, and reaching decision-makers to influence social change. Using the photovoice methodology, we engaged community members and student volunteers to use cameras to capture the lived experience of Filipino residents in Queens, New York and Jersey City, New Jersey. Through facilitated consciousness-raising discussions, we elaborated on particular themes that emerged through their pictorial documentation.

Results: Using photos and emergent themes, we will illustrate how Filipino food, nutrition and environmental factors have impacted residents’ cardiovascular health. We will describe how the findings from the photovoice project were disseminated to community members and how we engaged policy makers to respond to community concerns. As a supplement to an overall needs assessment, photovoice revealed challenges and opportunities for Project AsPIRE’s outreach strategies.

Learning objectives:
• Describe the photovoice process with Filipino Americans in the NYC Metropolitan area
• Identify strategies to engage community members in conducting asset mapping activities
• Apply methods to document community needs and assets and utilize findings to impact policy and public health in other immigrant and minority communities.

04-15 Preventing youth violence: Understanding, assessing and integrating participatory research methods
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Background: Youth violence is a significant public health problem. While successful youth violence prevention programs often hinge on meaningful community involvement, the utilization of participatory methods in such research varies considerably. Interpersonal and organizational relationships are often described in
the context of best practices, yet empirical descriptions of the relationships between
the community and investigators are lacking. This study characterizes the state of
participatory research methods published in the field of youth violence prevention.

**Methods:** A systematic review of the peer-reviewed published youth violence
literature was conducted. Included articles were primary reports interpersonal youth
violence (excluding relationship violence, child maltreatment, and war) that included
some participatory component. Pre-established criteria, including principles of
participatory research, guided the review and inclusion criteria.

**Results:** Databases queries returned 554 unique articles. Records were independently
evaluated for inclusion by two reviewers and ties were broken by a third. Eighty
percent of the articles did not meet eligibility criteria based on a title or abstract
review. A total of 112 records underwent full-text review. Specific attention was given
to the levels of community participation in the research and a taxonomy (i.e.,
cooperation, collaboration and partnership) was developed. A summary of the types
of settings, audience and research findings will be included in the presentation. Studies
exemplifying each level of the community participation taxonomy will be highlighted.

**Conclusions:** Is more community participation always better? Results from this
literature review will be used to engage the audience in a thoughtful discussion
about the role of community participation in informing, conducting and translating
youth violence research.

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**04-16 Toronto’s multi-faith alliance to end homelessness: A powerful intervention
in urban health**

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The Wellesley Institute, a research and policy institute dedicated to advancing urban
health, helped to create Toronto’s multi-faith alliance to end homelessness (MFA).
Toronto has a significant housing and homelessness crisis, along with a diverse
ethno-cultural mix, including faith communities. A key strategy to end homelessness
is to mobilize civil society, private businesses, health organizations, governments and
other sectors. In 2006, the WI’s Blueprint to End Homelessness collaborative process
identified mobilization structures in most sectors, but not among faith communities.
Many faiths were engaged in emergency relief (soup kitchens, emergency shelters,
etc.) delivered through a charity model. And the blueprint noted that a growing
fatigue among the volunteers. The MFA has grown to include 33 faith leaders,
including Christian denominations (Anglican, Catholic, United Church, Baptist,
Evangelical, Mennonite, Salvation Army, Pentecostal), plus other faith groups
including Jewish, Hindu, Jain, Tibetan Buddhist, Unitarian, Baha’I, Muslim and
Aboriginal. The group continues to grow. In its early days, the multi-faith alliance
collaborated on a declaration and call to action. The MFA’s objective is to engage
faith communities in the campaign for healthy and affordable homes with a focus on
“upstream” interventions instead of charity. The group seeks to reach recognized
faith leaders and grassroots members of mosques, churches, temples and other
places of faith. The group has an information-sharing network, developed tools for
action, held seminars and workshops in a variety of faith communities and
collaborated on initiatives that have moved the public and political housing agenda.
The process of developing a common language among different faiths, and creating
a trusting atmosphere, has been powerful and succeeded in having a policy impact.
The MFA has created a governance structure and is building a financially sustainable foundation. It serves as an exciting model for other communities.

04-17 Urban outreach - Increasing access and decreasing barriers
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In 2005 Outreach Urban Health (OUH) opened it doors as the first full-scope Primary Health Care Centre in the Kelowna downtown area. In response to the emerging needs of the core disenfranchised and homeless population, OUH was able expand services, staff and physical space to become the hub for an aggressive interagency community response to serving this population. Today OUH operates 5 days a week with physicians, nurses, social work, mental health and alcohol and drug counseling. Most recently OUH has added a unique telepharmacy service onsite using video pharmaceutical consultation and remote dispensing for medication. This service eliminates barriers and increases medication compliance. While OUH recognized the importance of directly addressing the social determinants of health and recovery, greater community involvement, support and interagency cooperation was needed to address the complexities of street entrenchment. In 2006 the Partners in Community Collaboration (PICC) group was formed and hosted by OUH. This group includes over 16 front line service agencies meeting weekly for coordinated case reviews, specifically focusing on high risk individuals. Through this collaborative process over a one year period, PICC was able to connect 123 street clients to stable housing and income support, with only 15 clients returning to the street. Today PICC continues to meet weekly, connecting clients to appropriate services and coordinating treatment and care planning.

Next steps: adding an aboriginal navigator position to the team
- increase hours and flexibility of outreach
- continue interagency collaboration with community partners.

Diversity and Urban Health

05-01 Differences in social and health determinants between First Nations and Non-First Nations Aboriginal people living with HIV/AIDS in Ontario: The Positive Spaces, Healthy Places Study
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Background: Aboriginal people are vastly overrepresented in the HIV epidemic in Canada, but little is known about whether some Aboriginal groups are more at risk
than others. The purpose of this paper is to highlight the differences in health and social determinants between First Nations (FNs) and Non-First Nations (NFn) Aboriginal people living with HIV/AIDS (APHAs) in Ontario.

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

**Results:** Fifty (63%) participants were FNs who would have lived at least part of their lives in reserve communities and 30 (37%) were NFn who have lived most of their lives in off of reserve settings. Only 1 of 10 of all APHAs was employed and only 1 in five were housed in facilities with on-site support services. FNs-APHAs were less likely than NFn-APHAs to have completed high school, were more likely to have been incarcerated, have been homeless, to note feel at home in their neighbourhood, have harmful alcohol use, and have experienced significant depression. FNs-APHAs were also less likely that NFn-APHAs to be on antiretroviral treatment or to have seen an HIV specialist.

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

**05-02 Differential health access of officially listed and unlisted slums**

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**Background:** Indian Urban Local Bodies prepare official slum lists and these lists form the basis for providing basic health services in the listed slums. These lists are not annually updated. Hence, many newly emerged slum clusters remain unlisted. Official slum status influences health and overall living standard of slum dwellers as unlisted slums are often excluded from government and non-government programs. This paper presents the disparity between listed and unlisted slums with respect to access to basic maternal-child health services.

**Methods:** Data from a household survey on maternal-child health in listed and unlisted slums of Indore city, India was used. Bivariate and multivariate analyses were performed for select indicators like institutional deliveries, immunization status of children (aged 12–23 months) and access to drinking water and toilet facilities.

**Results:** In bivariate analysis, compared to listed slums, unlisted slums had significantly lower proportion of institutional deliveries (57% vs. 52%), fewer fully immunized children (53% vs. 45%), lower access to piped water supply (30.0% vs. 23%) and toilet facility (77% vs. 73.5). In multivariate analysis even after controlling for socio-economic and demographic factors, compared to listed slums unlisted slums had - 16% lower likelihood of institution deliveries (OR - 0.84; CI 0.72–0.99) and 46% lower likelihood of access to piped drinking water (OR - 0.54; CI 0.46–0.63).

**Conclusions:** Identification and mapping of all slums and regular updation of slum lists are crucial to increase reach and coverage of basic health services especially in unlisted slums, which have lower health access to program interventions.
05-03 Direct and indirect effect of social support on health-related quality of life among people living with HIV/AIDS in Ontario: The Positive Spaces, Healthy Places Study

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

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

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

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

05-04 Discourses on improving youth sexual health

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Issue: Significant attention has been focused on youth sexual problems, with most analyses attempting to account for negative outcomes (e.g., STIs) by examining individual characteristics and risk-taking behaviour. Much of public health
intervention at both the policy and programming levels has followed suit - focusing primarily on modifying sexual risk behaviour and lifestyle “choices”. In doing so, these approaches may be unwittingly committed to an unrealistic set of assumptions about the level of agency and control that is afforded to many young people. Moreover, although interventions within the health sector are important, major determinants of youth sexual health (which are also amenable to policy and program interventions) exist in sectors outside of health.

**Description:** This paper “unpacks” the underpinnings to conventional approaches to improving youth sexual health and describes how interventions in sectors beyond health (e.g., education, social services) also have bearing on young people’s sexual health. We draw on the works of Foucault to analyse discourses about the inherent and historical connections between policy, legislation, and young people’s rights with respect to their sexual health.

**Lessons learned:** Using examples of discourse from multiple sectors related to early age pregnancy, this paper reveals how themes of safety and goodness have been privileged as healthy, while other, unauthorised forms of youth sexual behaviour have been marginalised.

**Next steps:** We suggest promising ways for shaping new discourses that emphasise the potential of public health researchers and practitioners to arrest the accumulation of sexual health inequities into youth’s futures.

**05-05 Disparities in health outcomes and social determinants of health between Aboriginal and Caucasian people living with HIV/AIDS in Ontario**

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

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

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

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

**05-06 Exploring partner violence and its association with HIV status among a diverse sample of racial and sexual minorities**

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**Background:** A variety of socially driven health problems, including intimate partner violence (IPV), worsen the health status of positive persons. The IPV and HIV intersection is rarely studied among men and non-heterosexual populations. The primary objectives of this study were to examine IPV prevalence and whether HIV status disclosure increases the risk of IPV among male and female patients at an HIV treatment center in Pittsburgh.

**Methods:** A sample of 51 HIV positive individuals were recruited using posting flyers at the center and a recruiter to approach patients. A survey containing quantitative and qualitative items regarding IPV experiences, safe sex practices, and HIV status disclosure was administered to participants.

**Results:** 70% of the sample were male, and about half the sample were homosexual or bisexual. Over 50% of the participants were African American and 39% were White. Three quarters of the sample reported ever experiencing IPV, while 57% reported verbal abuse, 63% reported physical abuse, and 18% reported sexual abuse. Overall, 32% of participants who reported verbal or physical abuse believed their abuse was related to their HIV positive status. And 6% of the participants reported that their partner became violent or physically attacked them when they disclosed their HIV positive status.

**Conclusions:** Results indicate that rates of IPV, and the relationship of HIV status to partner abuse are significant issues among this sample of HIV positive persons. Future intervention efforts should target the cessation of abuse among both HIV positive men and women.

**05-07 Health status and access to health care for aboriginal people who are homeless in Toronto, Canada**

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**Background:** Homeless people have poorer health status than the general population and often experience difficulties obtaining health care. However, limited quantitative data is available on the health status of specific populations who are overrepresented
in the homeless community, such as Aboriginal people. This study examined access to health care and health status among homeless Aboriginal people in Toronto.

**Methods:** Recruitment of randomly selected homeless persons took place at 26 shelters and meal programs in Toronto, Ontario, between November 2006 and February 2007. 368 homeless single adults were interviewed and 55 self-identified as Aboriginal. Information was obtained on demographic factors, health status, health determinants, and access to health care.

**Results:** Findings are based on those identifying as Aboriginal. 37% of respondents were female and 85% were aged 25–49. The average number of years homeless was 4.9. Aboriginal people made up a much higher percentage of our sample (15%) when compared to the percentage they represent in the general population of Toronto (0.5%). Health status indicators revealed significant health concerns: 36% reported having Hepatitis C, 22% reported diabetes, and 26% reported skin disease. 27% of respondents had no usual source of health care. During the past year, 40% of all respondents experienced discrimination by a health care provider based on homeless status and 16% based on race.

**Conclusion:** Aboriginal people in Toronto are overrepresented within the homeless population and experience extremely poor health. Discrimination based on homelessness and race is a commonly reported barrier to health care. Because adequate and appropriate income, housing, and support services are central to enabling access to health care, programs and policies should be re-examined to ensure that the needs of homeless Aboriginal people are met.

**05-08 Reaching sex workers and patrons of sex workers: An on-line sexual health education and referral service**

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**Issues:** Sex work is linked with behaviours that place individuals at higher risk for Sexually Transmitted Infections. An estimated 16.8 million (68%) adult Canadians use the internet for non business reasons and the perceived benefits are anonymity and accessibility. Sex workers and their patrons do not readily disclose their sexual behaviour to their primary care providers, nor access traditional healthcare services because of fear, stigma and judgment. Internet outreach is an innovative way for nurses to reach this population.

**Description:** Outreach Nurses with the British Columbia Centre for Disease Control have provided on-line sexual health information and referral to sex workers and their patrons on Pacific Escort Review Board (PERB.ca) since 2006. PERB is a site where women advertise their services for male patrons. Nurses provide information via email or message boards in a Health Information forum.

**Lessons learned:** An evaluation was conducted and self-reported changes in risk behaviours and attitudes were collected on 115 respondents. 92.5% (105) reported that the online sexual health service was useful or very useful. 91.9% (111) stated that it was a good or very good way to get sexual health information. After using this service 34% (39) stated they changed their thinking about safer sex practices and 30% (34) stated they changed their condom use practices. Online outreach is an effective way to reach this hard to access population.

**Next steps:** Outreach Nurses have expanded on-line services to four other internet sites. Future plans include podcasts, blogs and videocasts and a virtual clinic.
05-09 The Vancouver youth drug reporting system: Finding differing drug prevalence and reasons for use among ethno-cultural youth populations

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Introduction: Research on drug use prevalence and prevention by ethno-cultural group is limited particularly in Canadian urban cities. Using the Vancouver Youth Drug Reporting System (YDRS), a surveillance research system designed to track emerging trends in drug use and related harms, ethno-cultural comparisons can be made.

Methods: Convenience, purposive and snowball sampling methods were used to recruit participants between the ages of 16 and 25 in Vancouver. Structured survey/interviews included questions on prevalence and frequency of drug use, peer groups/family, demographics, drug-related attitudes, and preferences regarding prevention strategies.

Results: 604 youth participated; mean age 19.8 years, 49.8% were male, and 71.7% were currently enrolled in school. 47.4% identified as White, 18.7%-Chinese, 7.5%-Aboriginal, 6.1%-East Asian, and 5.5%-South Asian. Aboriginals reported highest lifetime drug use while Chinese reported the least with Chi-square tests indicating significant differences (p<0.005) between these groups for: tobacco(75.6%,23.0%,respectfully), marijuana (91.1%,34.5%), ecstasy(55.6%,11.5%), mushrooms(57.8%,8.0%), and cocaine (44.4%,0.9%). Alcohol lifetime use was highest for Caucasians(96.9%), being significantly higher than South Asians who drank the least(69.7%). Asians were found to have high family support compared to Aboriginals and Whites. The best prevention strategy indicated was hearing stories from those who have used drugs(85.6%) followed by obtaining drug information from friends/peers(74.2%); Chi-square tests found no significant differences between ethno-cultural groups.

Conclusions: Significant drug prevalence differences were found between ethno-cultural groups; particularly between Aboriginal and Chinese youth. These differences need to be further examined for their context (e.g., research suggests Chinese are less likely to truthfully report for fear of being caught for their drug use and/or the family support found in Chinese could be a protective factor against drug use). With growing multiculturalism in urban cities, monitoring efforts such as the YDRS should be ongoing and further work should focus on these ethno-cultural differences so to better plan prevention strategies that are culturally, gender and age appropriate.

Drug Use, Mental Health and the Urban Environment

06-01 “Your name carries weight”: The impact of Hurricane Katrina on drug use behaviors among evacuees in Houston

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Background: There is limited knowledge on the impact large disasters have on drug user’s behaviors in particular among disadvantaged minority populations that are displaced to new communities. This research focuses on the social and psychological processes associated with adapting to new environments among Hurricane Katrina New Orleans evacuees.
Methods: This paper presents ethnographic interview data from a larger NIH funded study (n=350) with Katrina evacuees currently living in Houston.

Results: The qualitative data identifies distinct social processes associated with the evacuees’ experiences related to drug use patterns before and after the hurricane. Attention is given to the role of psychological distress as it relates to evacuees drug use behaviors. Five themes emerged in the analysis including:

a) maturing out;
b) impact of the hurricane on New Orleans residents “equalization of the storm”;
c) adapting drug use patterns;
d) access to drug markets “your name carries weight”; and
e) surviving strategies in Houston.

Conclusions: Findings demonstrate that overall patterns of substance use among drug using Katrina evacuees may be related to psychological distress related to loss of community and the exposure to new drug market opportunities in Houston. Discussed are the specific consequences of disasters on disadvantaged, minority substance users and the importance of developing public health disaster policies that target this population.

06-02 A systematic review of interventions to improve delivery of health care to HIV-infected injection drug users

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Introduction: Although many studies have identified barriers to effective health care delivery for injection drug users (IDUs), methods to improve care are not well known. We performed a systematic review of interventions evaluating delivery of Human Immunodeficiency Virus (HIV)-related health services to IDU populations.

Methods: We searched electronic clinical databases, conference proceedings, and reference lists. We included studies that included HIV-positive IDUs, had a contemporaneous control group, were prospective, and evaluated an intervention to improve delivery of health services. We imposed no restrictions with regard to age or outcome measures. We extracted data regarding reporting, interventions, outcomes, results, and study quality.

Results: We identified four relevant studies, two controlled trials and two prospective observational studies. Each study evaluated a counselling or support intervention, sometimes alongside other interventions such as directly observed therapy or paying participants. Three studies reported results that were meaningful from a clinical or policy perspective, including improved adherence and virologic control. In one study, the effect was not sustained beyond the duration of the trial. The largest randomized controlled trial of a peer-led intervention demonstrated no effect on utilization of primary care services or on adherence. Limitations included the restricted range of settings (each study was conducted in the United States) and considerable study heterogeneity, precluding our ability to summarize data using meta-analytic methods.

Conclusions: The evidentiary base for a strong conclusion about the optimal method for delivering health services to HIV-positive IDUs is too weak to make firm conclusions. Counselling, support, and linking care to drug addictions counselling are promising but unproven interventions. Future research should focus on
developing appropriate methods for studying interventions in this population, evaluate a broad range of interventions, and address generalizability.

06-03 Access to health and social services for homeless crack cocaine users in Toronto, Canada
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Background: While it is known that crack users have poorer health than the general population, little information is available on homeless crack users’ access to health care and basic homeless services. This study examined access to health and social services among homeless adults in Toronto who reported being regular crack users.

Methods: A representative random sample of 368 homeless adults in Toronto were interviewed about their health and health care access. Study findings are based on the 178 participants (49% of the total sample) who reported using crack regularly (3 or more times per week).

Findings: Homeless crack users had been homeless longer on average (6 years) compared with non-crack users (3.5 years) and were more likely to say that their addiction was a primary reason preventing them from finding or maintaining housing. Crack users have more difficulty meeting basic survival needs including shelter and food: 65% of crack users had not been able to get a shelter bed at least once in the past year compared to 45% of non-crack users. More crack users (35%) reported being hungry at least once a week compared to non-crack users (22%). Crack users reported higher rates of: being refused health care (31%) and discrimination by health care providers (53%).

Conclusions: Homeless crack users face multiple and additional barriers to health care and other services compared with the general homeless population. This points to the need for services that operate from a harm reduction perspective and that are crack-specific. This type of model is coordinated by Street Health and includes a drop-in, housing help, health care and capacity building activities. This model has successfully enabled homeless crack users to access health care and other services.

06-04 Disparities in health outcomes and social determinants of health between people living with HIV/AIDS in Ontario with and without HCV co-infection: The Positive Spaces, Healthy Places Study
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Background: Hepatitis C virus (HCV) infection affects the health and quality of life of people with HIV. Clinical course and treatment of each infection is complicated
by the presence of the other infection. The purpose of this study is to examine the differences and impact of the social determinants of health in people with HIV and HCV as compared with those with HIV alone.

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

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

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

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**06-05 Drug dependence and crime: Healthcare trajectories associated with improved outcomes among clients of a drug treatment court**

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**Introduction:** Drug treatment courts (DTC) have proliferated in North America since their inception in 1989. The close collaboration between judicial and health professionals constitutes a promising innovation and a compelling alternative to the traditional administration of justice for drug dependent offenders. However, outcome evaluations on DTC’s have been challenged by diverse methodological factors including the peripatetic character of the client group as well as the wide variety of services that are involved in the suite of interventions that many courts seek to integrate.

**Method and approach:** This study utilizes an integrated administrative database in order to delineate the utilization of health, welfare, and correctional services prior to and following DTC involvement. We examine whether there are differences between those who meet the DTC program criteria (i.e., graduates) versus those who do not (non-graduates) over the two-year period of time following DTC. We also investigate differences between the groups over the four years prior to their involvement with the DTC.

**Results and discussion:** Following their exposure to the DTC, graduates were associated with enduring reductions in correctional involvement, while non-graduates were associated with increased correctional activities. On a cost basis, the decline in correctional activity among graduates was fully offset by increased
utilization of health services. Non-graduates, by contrast, showed comparatively low rates of health service involvement. In the years prior to their involvement in DTC, future graduates were significantly more engaged with community health services than future non-graduates. These results suggest a pre-existing propensity for health service involvement among a subgroup of offenders that may have been positively accelerated by DTC processes. If subsequently confirmed, this result could carry implications for DTC participant selection and for further understanding the role of motivation in relation to mandated or coerced forms of substance use treatment.

06-06 Empowering street youth through knowledge integration at Dans la rue
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Dans la rue, Montreal, Canada

The outreach nurse will present the evolution of a well-known private community organization providing for homeless youth in the city of Montreal. The philosophical foundation of Dans la rue’s mission is built upon assisting street youth to first meet their basic needs through unconditional respect and acceptance and its youth workers maintain the importance of an individualized harm-reduction approach that recognizes the needs of each individual arriving at the day center. Dans la rue stands out from other organizations of its kind by the variety of services it chooses to provide, most notably an on-site clinic staffed by a nurse on a daily basis. Faced with the widely reported reduction of services for physical and mental health and the limited treatment facilities for those with problems of drug and alcohol use, I have endeavored to exploit the strengths, curiosity and intelligence of youth arriving at the day center to empower them through education about their bodies, their choices, and their health. Working closely as part of the team of youth workers and psychologists at DLR, nursing integrates information and research in adolescence and street life from global and local sources, training and education from Public Health and partner organizations on topics relevant to street youth intervention and shares this knowledge with the youth. Posters designed and selectively placed, one-on-one and group workshops are some of the methods used to inform and stimulate discussion on subjects including suicide prevention, mental health, drug and alcohol consumption, sexuality, pregnancy and infectious diseases. I will discuss how these efforts have been received and responded to by marginalized and impoverished youth, the results observed and how government departments could responsibly support these efforts and protect the future of these incredible people who for many reasons presently find themselves in situations of great precariousness and danger.

06-07 Factors contributing to sustained cessation from heroin use: Findings from the CHANGE study
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Background: Despite abundant literature on substance abuse treatment outcomes, there is little information on heroin use cessation deriving from a community based sample. The ongoing CHANGE study is investigating multi-level determinants of heroin use cessation utilizing quantitative and qualitative methods. The current analysis is focused on the qualitative component of the project.
**Methods:** In-depth, qualitative interviews focused on drug use history and factors affecting drug cessation and relapse were conducted with former and current heroin users. Potential participants were screened for eligibility based on age, heroin use history, and attempts at cessation. All participants interviewed to date (n=18) lived in NYC; they were predominately lower income, male (77%), Latino (61%) and older (mean age=41). Using standard qualitative analytic methods, interview transcripts were examined for common thematic elements.

**Results:** Participants described a high number of traumatic events in their lives and significant mental health issues. Despite these difficulties, they found strong motivation for cessation in “pull factors,” such as desires for stable housing and employment, as well as “push factors,” such as fear of losing children and estrangement from family. Facilitators of sustained cessation included participation in a variety of treatment modalities; avoidance of triggers (e.g. pocket cash, particular locations); memories of withdrawal; and engagement in alternative activities, including, school, support groups, work, or faith-based practice. Several reported that even short periods of abstinence serve as motivators that increase confidence and facilitate sustained cessation and other behavior changes.

**Conclusions:** These findings suggest significant resilience and ongoing efforts to change, despite a number of challenges. Short periods of abstinence result in increased self-confidence and provide insight into lifestyle alternatives. In combination with motivation and behavior change, these “experiences of success” may be important building blocks to eventual sustained cessation.

**06-08 Housing and Supports for Adults in British Columbia with Severe Addictions and/or Mental Illness**

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**Background:** Homelessness has reached unprecedented levels across urban and suburban areas throughout British Columbia and North America. This poster focuses on the disproportionate number of absolutely homeless adults in BC who have severe addictions and/or mental illness (SAMI).

**Methods:** We used epidemiological research and expert consensus to estimate the number of adults with SAMI who are absolutely homeless across BC. We examined the current blend of housing and supports for the SAMI population and contrasted it with what is recommended based on research literature and expert consensus. Finally, we calculated both the cost of implementing the recommended blend of housing and support versus the cost of remaining with the status quo.

**Results:** Based on epidemiological research, an estimated 130,000 adults in BC meet criteria for SAMI, of whom an estimated 11,750 are absolutely homeless. In BC there are 7,741 residential units with related support available to adults with SAMI. Clearly, the need for supported housing is significant. Research confirms that housing with supports in any form is an effective intervention for people with SAMI. In BC, the average street homeless person with SAMI costs the public system in excess of $55,000 per year. Provision of adequate housing and supports is estimated to reduce this cost to $37,000 per year. This cost avoidance is likely conservative as many costs are difficult to quantify.
Conclusions: The cost of providing supported housing to adults with SAMI is less than that incurred through the status quo. Homeless people with SAMI can remain in stable housing if provided with adequate support.

06-09 Information for action; Usage of surveillance data for program improvement
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Background: National AIDS Control program has implemented surveillance in order to formulate informed policies and to improve program intervention. As a part of surveillance, we mapped injecting drug users (IDUs) and conducted integrated biological and behavioral surveillance (IBBS).

Methods: A cross-sectional survey was conducted during 2007 at border town of Sargodha preceded by geographic mapping to; estimate IDUs population, define sampling procedure and to see distribution pattern of hotspots. An individual injecting drugs for the last six months for non-therapeutic purpose were recruited through time location cluster sampling. Four hundred behavioral questionnaires and dried blood spots (DBS) for HIV testing were administered after taking informed consent. All biological samples were screened by screening EIA (Enzyme Immunoassay or ELISA). Specimen positive by the second EIA were confirmed by the western Blot.

Results: A total of 2,450 IDUs were estimated at 216 hotspots with an average of eleven IDUs per spot. Majority of shooting sites were located either at densely populated central area or within peri-urban areas. 51.5% (CI: 46.4, 56.1%) of IDUs were HIV positive and among them 196 (49%) injected heroin. 206 (51.5%) IDUs were married and mean age of initiation of injecting drugs was 28 years. 69 (17.3%) migrated from rural areas during their life time. Sharing of injecting equipment was reported by 157 (39.3%) and 52 (25.9%) used condom during last sexual act. Only 256 (64%) of IDUs were registered with existing harm reduction program situated in two locations. Statistically significant differences were noted between needle sharing and migratory pattern of IDUs (p: 0.00049).

Conclusion: Surveillance findings indicate high sharing of equipment, low condom use and low utilization among IDUs. HIV prevention programs require re-positioning and enhancement of out-reach services to increase utilization by vulnerable population in HIV concentrated area.

06-10 Innovations in addiction services: Applying community partnerships to develop and implement cultural and ethnic addiction services
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Issue: The majority of Canadian addiction treatment services as well as best practices are geared towards white, male, middle-class clients, hence neglecting the particular needs of ethno-culturally diverse communities. In a time when western countries experience a rise in immigration, this poses a predicament given that research associates many immigration experiences with addictions and that certain urban areas are developing high density of immigrant diversity.
Description: Over the past 6 years, a Toronto community (Scarborough), as a first in Canada, has spearheaded an innovative community-based funding program to engage diverse communities to develop and implement their own addiction services. In this capacity, the Scarborough Addiction Services Partnership (SASP) (trustee: Centre for Addiction and Mental Health) has funded culturally responsive addiction services in the Somali, Afghan, South Asian, Aboriginal, Tamil, and other communities.

Lessons learned: In 2007, SASP engaged in a three-part evaluation: community-based participatory research on the partnership, review of statistics of 6 years, and process evaluation of two cultural specific programs (Afghan and Tamil). Despite several limitations, we found that community-based development of services for ethnoculturally diverse communities has many advantages and, notwithstanding program-specific difficulties, has tremendous potential including replication.

Next steps: We are currently planning to develop a model of community-driven service development and implementation and to engage in more detailed research to expand and share our ability to assist the creation of community-based culturally appropriate addiction services.

06-11 Neighbourhoods and networks: Community, homophily, and drug use among urban gay men
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Background: Gay neighborhood enclaves serve as important socializing and recreation places for urban gay men—both those residing in the enclave and those living elsewhere in the city. Extensive research has focused on the role of “neighborhood effects” as well as the influence of social networks for a variety of urban health issues. Yet, little research has explored the intersection of these two key factors - particularly for drug use among gay men. Drawing from theoretical perspectives in community sociology, we test hypotheses concerning whether residence in gay enclaves influences patterns of recent drug use, both directly and via the mediating influence of individuals’ social network interactions.

Methods: We use multilevel models to analyze marijuana, cocaine, ecstasy, crystal meth, and poppers use among a novel sample of 733 urban gay men residing in the New York City area.

Results: Gay enclave environments were only associated directly with higher odds of crystal meth use, after controlling for neighborhood-level socioeconomic conditions and individual-level sociodemographic factors. In terms of networks, increased levels of socializing with gay men was associated with higher odds of drug use. Conversely, increased frequency of socializing with either lesbians or heterosexuals was associated with lower odds of using some drugs. Gay men with homophilous networks - i.e., gay men who socialize predominantly with other gay men (versus gay men with more diverse networks) have higher odds of using some drugs. Our findings provide little evidence that network factors mediated associations between enclaves and drug use.

Conclusions: These findings suggest that geographic community and social networks factors shape the health risks encountered by urban gay men—both independently and collectively—thus posing implications for further place and non-place-based research and interventions. Furthermore, our work highlights the importance of
conceptualizing social capital in terms of actual social connections and not simply perceptions of community trust and related norms.

06-12 One way bridge or two-way street? Male injectors trading sex as an HIV transmission bridge - An exploratory analysis in Tijuana, Mexico

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Objective: HIV prevalence among men having sex with men (MSM) in Tijuana, Mexico is high, but is low among male injection drug users (IDUs). We compared heterosexual male IDUs to MSM-IDUs who had and had not traded sex to determine the extent to which they represented a potential HIV transmission bridge.

Methods: Beginning in April 2006, IDUs who had injected within the last month and resided in Tijuana were recruited using respondent-driven sampling and underwent interviews and testing for HIV, syphilis and TB. Weighted nominal regression was used to identify correlates of having traded sex with males, having non-paying male partners vs. heterosexuals.

Results: Of 898 male IDUs, 236 (26\%) ever had sex with males (MSM-IDU), of whom 101(43\%) had traded sex with males. Of sex traders, 90\% had traded for money; 32\% had traded for drugs. Of MSM-IDU, 83\% of sex traders vs. 84\% of those with non-paying male partners reported sex with females in the prior 6 months (p<0.792).

Compared to heterosexuals, factors independently associated with trading sex with males included having an IDU sex partner (AdjOR=6.3; p=0.002), receptive syringe sharing (AdjOR=2.3; p=0.001), using inhalants (AdjOR=3.0; p<0.0001) and having a high perceived HIV risk (AdjOR=2.1; p=0.001). Compared to heterosexuals, factors independently associated with having non-paying male sex partners included older age (AdjOR=1.034; p=0.003), receptive syringe sharing (AdjOR=2.7, p<0.001) and using inhalants (AdjOR=2.3; p<0.001).

Conclusions: Both MSM-IDUs in Tijuana who do and do not trade sex reported higher levels of needle sharing than heterosexual male IDUs. MSM-IDU sex traders were more likely to have IDU sex partners, but high percentages of both groups reported sex with women. These findings underscore the importance of targeted interventions that address the needs of both MSM-IDU subgroups to ensure that the concentrated HIV epidemic in Tijuana does not become generalized.

06-13 Optimizing HCV treatment uptake in injection drug users: A novel model incorporating multidisciplinary care and peer-support

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Objectives: In Canada, few IDUs have received HCV treatment, despite the availability of successful treatment. We evaluated HCV treatment uptake and
factors associated with uptake among IDUs attending a weekly peer-support group at a multidisciplinary clinic.

**Methods:** Beginning in March 2005, patients interested in receiving treatment for HCV infection were referred to a weekly peer-support group and evaluated for treatment readiness and eligibility. Utilising our existing infrastructure for addiction disease management, we incorporated a multidisciplinary model of care for the treatment of HCV infection, including directly observed therapy (DOT) for medication administration. HCV treatment uptake in this setting was evaluated.

**Results:** Overall, 204 subjects were referred to the support group over a period of 156 weeks. Of these, 94 (46.6%) were lost to follow-up, 14 (6.9%) initiated or completed treatment for HCV infection prior to attending the group, 9 (4.4%) were under evaluation for treatment and treatment was deferred or not indicated in 30 (14.7%). Major reasons for treatment deferral included early liver disease (n=2, 6.7%), other medical or psychiatric co-morbidities (n=5, 16.7%), uncontrolled illicit drug or alcohol use (n=8, 26.7%) and previous non-response to HCV therapy (n=3, 10%). Uptake of treatment for HCV infection was 27.9% (n=57). In multivariate analysis, attendance at between 4 to 10 support group visits was associated with increased HCV treatment uptake (AOR 9.15; 95% CI, 3.01–27.77, P<0.001). Sex, year of first group attendance and day of support group attended were not significantly associated with treatment uptake.

**Conclusion:** This data demonstrates that with appropriate programs in place, a high HCV treatment uptake can be achieved among IDUs engaged in care through a peer-support group. HCV support group attendance provides an important predictor of individuals more likely to initiate HCV treatment and may constitute a screening tool to measure readiness in those medically eligible for therapy.

**06-14 Overdose experiences and responses**

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**Background:** Drug use and overdose is an important problem in many countries. Most overdoses in the community are witnessed and death occurs over several hours, giving ample opportunity for those present to intervene; however, morbidity and mortality remains high. The objective of this study was to document the circumstances surrounding drug overdose in a major Canadian centre.

**Methods:** Clients accessing a needle exchange program were approached for participation in the study. After informed consent was obtained, participants answered questions regarding demographics, personal experience with overdose, emergency medical services (EMS) use, and response to witnessing an overdose. Support for a community based naloxone intervention was also assessed.

**Results:** A total of 153 clients completed the survey (approximately 25% of those approached to participate). Most respondents were male (74%) and the median age was 40 years (IQR 33.0, 46.0). The most commonly used drugs in the last six months were marijuana (61%), crack cocaine (58%), alcohol (50%) and morphine (49%). The median number of overdoses ever experienced was 1 (IQR 0, 4) and the median number of overdoses ever witnessed was 2 (IQR 1, 10). Over 30% of
respondents avoided calling EMS at least some of the time. Support for a community based naloxone program was widespread (>80%).

**Conclusions:** Overdoses are commonly experienced and witnessed by regular drug users; however, significant barriers to EMS activation exist. Community programs should focus on overdose prevention and basic life support training. Community based naloxone programs warrant further consideration and study.

**06-15 Peer support using a mobile access van promotes safety and harm reduction strategies among sex trade workers in Vancouver’s Downtown Eastside**

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**Background:** Drug addicted women in the sex trade whose economic and social base are urban streets face multiple dangers of predation, assault and illness. A mobile access project (MAP) unit to provide emergency medical help, peer counselling, resource and referral information, facilitation of access to services and transportation, condoms and clean needles, and a place of respite and safety was initiated in Vancouver, British Columbia, Canada to serve the needs of sex trade workers. A van travels through a route in Vancouver 7 nights per week from 11 P.M. to 5 A.M. and is staffed by former sex trade workers recruited and trained by the project.

**Methods:** Interviews were conducted with staff working on the van. Face to face surveys were undertaken with 100 sex workers in the Downtown Eastside of Vancouver (DTES) on two occasions. Logbooks on the van were reviewed to document use of services.

**Findings:** Eighty percent of women surveyed at a drop-in centre in the DTES had received services from MAP. Distribution of needles and condoms have increased steadily since the implementation of MAP. Over 90% of MAP clients reported that the van made them feel safer on the street. Sixteen percent van could recall a specific incident in which the van’s presence prevented them from being physically assaulted and 10% could recall an incident when it had prevented them from being sexually assaulted.

**Interpretation:** The peer-led Mobile Access Project has emerged as a viable harm reduction strategy to serve the immediate and varied health and trauma-related needs of women engaged in street-level sex work.

**06-16 Removal versus integration: A comparison of two harm reduction programs targeting chronically homeless ‘street drinkers’ in Ottawa and Hamilton**

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**Background:** Alcohol maintenance is a harm reduction strategy that is currently being integrated with health care and supportive living services in an effort to house chronically homeless adults with a history of alcohol dependence. Only a handful of studies have evaluated the effectiveness of alcohol maintenance strategies and
questions remain regarding their impact on individuals exiting the streets. This presentation is drawn from research that employed qualitative methods to explore the experiential dimensions of alcohol-maintenance programs in Ottawa and Hamilton. The presentation directs attention to the therapeutic role of program environments and locations. The programs examined here represent two different geographical contexts. In Ottawa, the managed alcohol program was ‘integrated’ within an emergency shelter downtown. In Hamilton, the program was ‘removed’ to a mental health care facility in a suburban neighborhood.

**Methods:** The research involved 11 participants in Ottawa and 24 participants in Hamilton in longitudinal, semi-structured interviews. The interviews sought to chronicle the experience of living on the street and, later, the experience of living in a managed alcohol environment.

**Results:** The research revealed the important role of distance between the program environment and the street environment and its propensity to function as a facilitator and impediment to experiences that were spiritually, psychologically and physically therapeutic.

**Conclusion:** These findings offer insights to service providers seeking to introduce similar alcohol maintenance programs and considering whether to integrate programs within existing service milieus or seek removed locations.

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**06-17 The context of illicit drug overdose deaths in Vancouver and BC**

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**Background:** Illicit drug overdose deaths (IDD) relate to drug dose but also to context including combinations with other illicit and prescribed drugs and alcohol. IDD peaked in British Columbia (BC) in 1998 with 417 deaths; 45.8% were in Vancouver. The objective of this study is to explore recent IDD in BC by residence, age, sex and substance.

**Methods:** 2006 IDD data was obtained from BC Coroners Office.

**Results:** We identified 220 deaths with available toxicology results, 5 were classified as suicide. 54 deaths (24.5%) occurred in Vancouver; of these 53.3% were residents of Downtown Eastside (DTES). The mean age at death was 40.5 years; Vancouver deaths were older 43.9 vs. 39.4 years outside Vancouver. Aboriginal ethnicity was reported in 19 deaths; 13 (30.2%) of 43 females and 6 (3.4%) of 177 males (p=<0.001). Cocaine was identified in 79.5% of deaths, opiates 60%, methadone 14.1% methamphetamine/amphetamine 5.9%, alcohol 22.7%, antidepressants 10.5% and benzodiazepines in 3.6%. Poly-substance use was common, 2 or more substances were identified in 78.6% and 3 or more in 34.5% deaths. Opiates were more frequently identified in Vancouver 74.1% vs. 55.4% (p=0.015).

**Conclusions:** IDD in BC are substantial, and cocaine and poly-substance use common. The highest rate of IDD occurred in DTES, however nearly half of Vancouver deaths occur in non-DTES residents and three quarters of all deaths occurred in residents outside Vancouver. Tracking individual drug use is not sufficient to guide public health interventions; strategies should address poly-substance use and include urban and rural communities outside DTES.
06-18 The impact of ongoing illicit drug use on virologic suppression in HIV-infected injection drug users receiving HAART
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Background: To evaluate the impact of ongoing illicit drug use on virologic suppression in HIV-infected injection drug users (IDUs) receiving HAART.

Methods: In a longitudinal cohort study we identified HIV-infected IDUs who were prescribed HAART between 08/1996 and 08/2007. Urine specimens for toxicology assays were analyzed for amphetamines, benzodiazepines, cocaine and heroin/opiates. The ability to achieve virologic suppression was measured as a function of having a positive or a negative urinalysis for illicit drugs at baseline, as well as 6 and 12 months prior to treatment initiation. Virologic suppression was measured at weeks 24 and 48, based on an intent-to-treat analysis. Illicit drug use associated with treatment failure was assessed by multiple logistic regression.

Results: A total of 133 IDUs (79 male) were included. Virologic suppression was achieved, with having respectively a positive and a negative urinalysis for illicit drugs at baseline, as follows: Amphetamines (33%/53%), benzodiazepines (60%/49%), cocaine (42%/67%), heroin/opiates (48%/55%) or any of these illicit drugs (48%/63%). Similar results were obtained with illicit drug use during the previous 6 and 12 months. After adjusting for potential confounders, having a positive urinalysis result for cocaine at baseline (OR=0.33, 95% CI=0.12–0.87, p=0.026) and in the 6 months prior to treatment (OR=0.29, 95% CI=0.10–0.89, p=0.03) was significantly associated with virologic failure at week 24. Other illicit drug use was not associated with treatment failure at all other assessment points.

Conclusions: With the exception for cocaine, there were no significant associations between illicit drug use prior to treatment and virologic suppression on HAART.

06-19 The influence of social capital and neighbourhood characteristics on co-occurring maternal depressive symptoms and child behaviour problems
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Background: A growing body of research has noted the influence of social contextual factors at the family and neighbourhood-levels on maternal depression and/or child behaviour problems. Resources derived from social networks and from communities can have different effects on health behaviours and outcomes, as the composition of individuals’ social networks often extend beyond their neighbourhood boundaries. This study explored the effects of social capital, at the social network- and neighbourhood-levels, and neighbourhood characteristics on co-occurring maternal depressive symptoms and child behaviour problems among a sample of mothers in Baltimore.

Methods: Participants were recruited through door-to-door canvassing, targeted mailings, and referral from other participants in 163 neighbourhood block
groups in Baltimore, Maryland. In order to explore predictors of co-occurring maternal and child mental health problems, the analyses presented are focused on the female primary caregiver sample of 345 women. Multinomial logistic regression analyses were used to examine the effects of social capital and neighbourhood characteristics on co-occurring maternal depressive symptoms and child behaviour problems.

**Results:** In the analyses, social capital and neighbourhood characteristics emerged as significant predictors of co-occurring maternal depressive symptoms and child behaviour problems.

**Conclusions:** The findings of these analyses support the need for a social consequences model approach to research on mental health problems. Such an approach provides important knowledge of social contextual effects, such as social capital at multiple levels and neighbourhood characteristics, on mental health that can inform treatment strategies for co-occurring mental health problems.

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**06-20 The role of pharmacies in increasing access to sterile syringes for injection drug users (IDUs) in New York City**

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**Background:** The once-only use of sterile syringes is recommended to prevent the spread of bloodborne diseases among injection drug users (IDUs). While syringe exchange programs (SEPs) have increased access to sterile syringes, they cannot meet the needs of all IDUs. Pharmacies could supplement access to sterile syringes and may attract IDUs not using SEPs. This analysis will compare IDUs with syringe access via SEPs, pharmacies, both, and neither source with respect to sociodemographic variables, injecting practices, recent drug use, and healthcare utilization.

**Methods:** Survey data from participants recruited using street-intercept sampling in New York City. 363 IDUs were enrolled between January 2005 and September 2007. IDUs were classified by self-reported syringe source (SEPs, pharmacies, both, or neither) and were compared using chi-squared tests and polytomous logistic regression.

**Results:** Compared with IDUs using SEPs, IDUs using pharmacies were more likely male (AOR=4.09) and to inject with new, sterile syringes (AOR=2.38) and IDUs using both pharmacies and SEPs were younger (AOR=0.43), more likely to be male (AOR=1.90), inject daily (AOR=2.04), have been recently enrolled in a drug detoxification program (AOR=3.21), and to inject with new, sterile syringes (AOR=2.86). Still, a population of IDUs who inject less frequently (AOR=0.26) and are less likely to inject with sterile syringes (AOR=0.42) are not accessing syringes from pharmacies or SEPs.

**Conclusion:** Pharmacies reach a different subpopulation of IDUs than SEPs and should be pursued to increase syringe access and further reduce disease transmission. Targeted outreach is needed to reach IDUs without access to new sterile syringes.
06-21 The Tobacco Dependence Clinic (TDC): Providing smoking cessation for a drug treatment population
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Issues: Individuals in drug treatment and recovery are disproportionately affected by tobacco use morbidity and mortality. However, with adequate intervention, such individuals can succeed in smoking cessation. The Tobacco Dependence Clinic (TDC) provides smoking cessation counseling and pharmacotherapy services, in an urban setting, through the Addiction Services program of the Vancouver Coastal Health Authority, British Columbia, Canada. The objectives of this study are to describe the smoking cessation services and programs provided by the TDC, and discuss future steps related to further program development and evaluation of the TDC.

Description: Program participants receive a structured 8 week group therapy program and pharmacotherapy for smoking cessation. In this typically highly dependent population, pharmacotherapy is often used at “off-label” doses. Information regarding nicotine dependence, desire to quit smoking, drug use, and smoking abstinence are also obtained from participants at the beginning and end of the program.

Lessons learned: Contrary to common belief, individuals in drug treatment not only desire to quit smoking, but can be successful in doing so. To achieve smoking abstinence, combinations of cognitive behavioural and pharmacologic approaches are needed. Group therapy for smoking cessation programs in this population can offer a ‘safe’ environment in which individuals can receive appropriate intervention.

Next steps: Smoking cessation programs for drug treatment patients can substantially reduce the harms associated with tobacco use in this population. The next crucial steps are to implement a system for ongoing program evaluation (i.e., impact, process, and outcome evaluation as well as patient satisfaction) and to expand the services of the TDC to be more accessible to other “special populations”, such as the mentally ill, and ultimately, to the general urban population.

06-22 Tobacco use among illicit drug users: Do escalating taxes make a difference?
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Background: In 2002, New York City (NYC) and State raised cigarette excise taxes to a combined $3 per pack. In addition, NYC mandated smoke-free work places, increased education, and distributed free nicotine patches; an 11% decrease in the number of adult smokers was reported for 2002–2003. In light of recent efforts to further increase cigarette taxes by >$1, we explored the impact of current smoking programs among illicit drug users.

Methods: A community-based sample of 1809 heroin, crack and cocaine users aged ≥18 years was recruited. Prevalence of smoking was examined pre and post major tobacco tax increases (2000–7/1/2002 vs. 7/2/2002–present) using polychotomous logistic regression.
Results: The sample was 72.0% men, 56.9% Hispanic, 31.1% Black and 12.0% White/Other. 27% were aged <25 years. Overall, 97.5% reported smoking in their lifetime; 36.3% reported light smoking (0–10 cigarettes/day), 45.5% moderate smoking (11–20 cigarettes/day) and 18.2% heavy smoking (≥21 cigarettes/day). We observed a marginally significant association between smoking and cigarette taxes: heavy smokers were less likely to be recruited after tax increases (AOR=0.76, 95% CI=0.56, 1.02) compared to light smokers, after adjusting for race/ethnicity, education and income source.

Conclusions: We observed a marginal decrease in the prevalence of heavy smokers among our sample of illicit drug users and no change in the prevalence of moderate smokers, compared to light smokers. An illegal cigarette market has been documented in NYC; this may hamper smoking cessation strategies. These preliminary data suggest that current efforts in NYC may have limited success among this population.

Enforcement, Security and Urban Health

07-01 ICPC-coded health problems of detainees in Switzerland’s largest remand prison
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Background: Little is known about the health status of prisoners in Switzerland. The medical unit of Switzerland’s largest remand prison is attached to the Geneva University Hospitals and offers a low-threshold primary care approach to health care. The aim of this study was to describe the range of health problems managed within this unit.

Methods: A cross-sectional study included all ICPC-coded health problems of detainees who had a medical consultation during 2007. Information was obtained by chart review after release or transfer of the detainee.

Results: Of 2195 new arrivals at the facility, 1510 (68.8%) had a consultation with the GP. 95% were male, mean age was 30.1 years (SD 9.8). 10.6% were Swiss, 18.7% from Eastern Europe, 18.5% from Western Europe, 18.8% from North Africa, 18.9% from sub-Saharan Africa, 10% from Asia and 4.5% from America. Length of stay in the prison was less than 1 week for 33% and less than 90 days for 71% of detainees. The most common health problems were: smoking (69%), excessive alcohol consumption (41%), substance abuse (38%: heroine 17%, cocaine 27%, cannabis 36%), gastrointestinal (41%), skin (40%), osteoarticular (32%), lung (24%) and mental disorders other than substance abuse (16%). 12% reported exposure to violence by the police. 3.8% needed hospitalization for somatic and 2.3% for psychiatric problems.

Conclusion: These mostly young and male prisoners had a high morbidity, particularly substance abuse but also other frequent problems seen in general practice. As many have had no regular contact with health care services before their detention, prison health services can play an important role in offering access to health care, prevention and health promotion.
07-02 Syringe sharing after incarceration among active injection drug users in Vancouver, Canada
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**Background:** While incarceration has consistently been associated with HIV infection for individuals who use injection drugs (IDU), the post-release risk environment remains poorly described. We sought to assess the impact of incarceration on risk factors for HIV infection in a community-recruited sample of IDU in Vancouver, Canada.

**Methods:** Using a prospective cohort of active IDU followed from May, 1996 to December, 2005, we examined contingency tables and performed linear growth curve analyses to assess changes in the prevalence of independent risk factors for HIV infection before and after a period of incarceration among participants reporting incarceration and a matched control group.

**Results:** Of the 1603 participants followed over the study period, 147 (9.2\%) were included in the incarceration group and 742 (46.3\%) were included as matched controls. The groups did not differ by gender nor ethnicity. Using McNemar’s test, significant differences were found in one or both groups for the prevalences of frequent cocaine injection, needing help injecting, binge drug use, DTES residence, sex trade participation and syringe sharing (all \( p < 0.05 \)) after incarceration. In linear growth curve analyses adjusted for age, gender and ethnicity, syringe sharing was significantly more common in the incarcerated group in the after period than in the control group (\( p = 0.03 \)).

**Conclusion:** This analysis found that incarceration had no effect on the prevalence of several behaviours, including intense drug use and participation in the sex trade, that are risk factors for HIV infection. However, active IDU were more likely to report syringe sharing after a period of incarceration than those in a control group. These findings add more evidence to concerns over the impact of the criminal justice system on the health of individuals addicted to illicit drugs.

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**Environmental Health and Justice in Urban Settings**

08-01 Assessing local climate change risks in New York City neighborhoods: An educational template for college and high school student teams employing a community health risk assessment model
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**Issues:** Global climate change will impact New York City (NYC) in many ways that affect public health and safety. Long term sea-level rise is already the subject of research and planning to minimize damage. But, in the short term, it is more frequent and violent storms striking New York’s waterfront communities (population 400,000) that constitute the more immediate problem, placing many communities and vulnerable populations at risk of flooding and displacement.
**Description:** We have developed a template for assessing these risks using college and high school students employing a public health model based on community risk assessment - focusing on the effects of climate change at the neighborhood level. Student teams assemble basic demographic, geographic, and public health data on specific communities at risk for storm surge. They produce detailed local reports for distribution to community groups in each affected neighborhood to inform them and to aid in their preparedness efforts. We will report on four waterfront communities in NYC where teams of 3–4 undergraduate students (from Columbia University, City College, and Brooklyn Technical High School) employ data from urban planning, public health, and census sources integrated in GIS systems to produce detailed maps and reports of inundation zones for Category 1–4 hurricanes, population characteristics, housing data, infrastructure vulnerability, and evacuation plans. Students found little evidence of awareness or preparedness for these risks in these communities or their populations.

**Lessons learned:** This model is replicable and well suited to engaging students concerned about climate change in authentic community projects addressing risks facing many urban communities in NYC and other areas in the near term.

**Next steps:** Develop a NYC web site (PlanetNYC) for student reports and additional data to support local efforts at implementation of climate change mitigation and adaptation plans.

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**08-02 Health promoting inner city environments: Toward a participatory research partnership to reduce environmental inequities and promote health in Vancouver’s downtown eastside**

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**Background:** Current public health efforts tend to target ‘at-risk populations’, with little consideration for the role of place as a determinant of health. However, a ‘settings’ approach to research focused on promoting environmental health justice may be important for improving understanding of the conditions that circumscribe positive health experiences of community members. The purpose of this project is to develop community-based participatory research partnerships aimed toward promoting environmental health justice in Vancouver’s Downtown Eastside (DTES).

**Methods:**

1) Interviews with key stakeholders (N=11) in Vancouver’s DTES helped to identify the level of community capacity to partner in coordinated efforts to promote environmental health justice;

2) A photovoice technique was also used to engage community members (N=15) in a photography mediated narrative exercise designed to solicit positive and negative experiences of ‘place’ in their everyday lives.

**Results:** Results of the key stakeholder interviews show that local meanings of ‘health and place’ centre on the negative impacts of gentrification; community resilience as a key mobilizing resource; and the criminalization of public space. The community member photographic narratives (to be completed in July 2008) will provide key insights to guide the development of more robust and community relevant indicators of environmental health injustice upon which to plan social action strategies.
Conclusions: This project has laid important groundwork for a broader community-research partnership by coalescing researchers, key stakeholders and community members around environmental health justice in the DTES as a lens for action against gentrification, neighbourhood degradation, and social stigma. It also has the potential to set new directions in the field of environmental justice by contributing to improved indicators of environmental health that are grounded in the lived experiences of community members.

08-03 Public transit use, access to transit and walking for transportation in the Neighbourhood Quality of Life Study (NQLS): Preliminary results
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Background: Many public transit users reach physical activity recommendation by walking to and from transit stops or stations (Besser and Dannenberg, 2005). Existing evidence on the relationship between environments supportive of public transit and higher ridership also suggests that transit use may moderate the relationship between built environments and walking. Our objective is to analyse the relationship between transit use and weekly transportation related walking in different types of neighbourhoods. Additionally, we assess whether the association between walking and transit use vary if a person is dependent on transit or not.

Method: We use the NQLS 2001–2002 survey of randomly selected adults between age 20 and 65, (n=1700) in a cross sectional analysis of transit access and use and related walking in selected neighbourhoods. The NQLS is a matched community observational study purposively sampled across four types of neighbourhood in Metro Seattle, WA and Baltimore, MD. Neighbourhoods either have high or low median income and high or low walkability (n=8X4=32). We first assess the distribution of transit use and access by neighbourhood. We then compare transit users and non-users in their practice of transportation-related walking.

Results: We expect to find positive relationships between high walkability neighbourhoods and transit access and use measures, We also expect positive relationships between using transit and walking, and not owning car and walking, controlling for neighbourhood of residence.

Conclusion: Transit use may confound the relationship between walking and the built environment. Policies to create walkable environments may be more supportive of walking if developed in coordination with public transit service integration.

Migration

09-01 Access to urban public health services for international migrants, including refugees and asylum seekers: Experiences from South Africa
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Issues: Developing country urban environments, such as found in South Africa, are characterised by high rates of migration to urban areas. This includes rural to urban
migration within the country (internal migration) and international cross-border migration. A small - but significant - number of international migrants are refugees and asylum seekers. South Africa has an integrative urban refugee policy whereby no refugee camps exist; individuals are encouraged to self-settle and integrate into the host population. This threatened in light of current xenophobic attacks. A range of rights are afforded to international migrants, including the right to basic healthcare and antiretroviral therapy (ART). However, many challenges are encountered in trying to access public health services. 

**Description:** In order to better understand the challenges faced by all international migrants when attempting to access public health care services, a study investigating non-citizen access to ART in inner-city Johannesburg was undertaken. Four sites providing ART were identified (two governmental, two non-governmental). A cross-sectional survey of 449 randomly selected ART clients and semi-structured interviews with 34 healthcare providers were undertaken.

**Lessons learned:** Migration presents interlinked urban public health challenges that local government must address. International migrants face a range of challenges when attempting to access the public health system in urban South Africa. The right to health is not provided uniformly at the institutional level. International migrants were found to be denied treatment on the basis of ‘being foreign’ or lacking South African identity books. This goes against existing legislation and negatively impacts public health.

**Next steps:** Active use of research findings to engage with local health authorities is required. Processes must be developed to audit all public health institutions, provide appropriate training for all staff, and implement ongoing monitoring to ensure the right to health services for all is upheld within South Africa.

**09-02 Aging in a foreign land**

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As highlighted in the Madrid International Plan of Action on Aging, the phenomenon of global aging is occurring during a period of increasing globalization. Worldwide, there are more than 190 million migrants. The influence of migration on aging is not fully understood. The Aging in a Foreign Land project is developing a protocol for exploring the social, political, and economic experiences and circumstances that do and do not support immigrants as they age. A spin-off of the work begun by the World Health Organization Global Age-friendly Cities, the project pairs researchers and policy makers from a city that imports laborers with colleagues from a city that “exports” workers to that city to examine:

1) key characteristics of immigrant communities and receiving communities that support immigrant elders;
2) how best practices supporting older people within immigrant communities can be replicated, adapted, and/or exported to other countries;
2) lessons that can be drawn from existing policies that recognize the rights of citizens of foreign countries; and
4) how advocacy communities for the aged and for immigrants can join together to support age-friendly policies for older immigrants.

A key aim of the project is to raise awareness of the implications of labor and immigration policies on aging adults and to “mainstream” ageing into dialogs about global labor
markets and immigration. This session will share the project protocol collaboratively developed by the participating city-pair representatives, which include New York City and Kingston, Jamaica; Toronto and Hong Kong; and Vancouver and Shanghai.

09-03 Are Asian and Pacific Islander women in Chicago receiving appropriate cancer screening? Results from 3 community health surveys

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Background: Cancer is the leading cause of death for Asian and Pacific Islanders in the United States, yet data on cancer screening rates for this population is limited. The purpose of this study is to describe the breast and cervical cancer screening rates among three Asian populations in Chicago and compare survey findings to analogous state and national health statistics.

Methods: A comprehensive health survey was conducted with a sample of Chinese, Vietnamese, and Cambodian populations from 2006 to 2008 in Chicago. Face-to-face interviews were conducted with 784 eligible adults in Chinese, Vietnamese, Khmer, or English. Preliminary data is available for 219 Chinese, 250 Vietnamese, and 150 Cambodian participants.

Results: Among women age 40 and older, 44% (95% CI=34, 53) of Chinese, 61% (53, 70) of Vietnamese, and 48% (35, 61) of Cambodian women reported receiving a mammogram in the last 2 years, compared with 58% for Asian women and 77% for all women in the U.S. Likewise, 40% (31, 47) of Chinese, 68% (61, 75) of Vietnamese, and 52% (41, 61) of Cambodian women 18 and older reported having a pap smear in the last 3 years, compared to 68% and 84% for U.S. Asian women and all women, respectively.

Conclusions: Cancer screening disparities exist among Asian populations in Chicago. Eliminating screening disparities requires interventions be guided by local population statistics to effectively address barriers of a largely immigrant Asian population. Further studies should explore cultural beliefs and factors of immigrants that may affect low screening rates.

09-04 Homelessness and immigration in Toronto: A comparison of the health of homeless recent immigrants, non-recent immigrants, and Canadian-born individuals

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Objectives: To compare demographic characteristics and health problems among recent immigrants, non-recent immigrants, and Canadian-born individuals in a representative sample of homeless people.

Methods: A stratified random sample of homeless people (603 single men, 304 single women, and 284 adults with dependent children) was enrolled at 60 shelters and 18 meal programs in Toronto in 2005. Participants were classified as recent immigrants
(α10 years since immigration), non-recent immigrants (>10 years), or Canadian-born. Physical health was assessed using the SF-12. Mental health, alcohol, and drug problems during the current month were assessed using the Addiction Severity Index.

**Results:** Participants were 10% recent immigrants, 22% non-recent immigrants, and 68% Canadian-born. These groups differed significantly in mean age (28, 40, and 36 years, respectively), sex (67%, 53%, and 41% female), race (81%, 78%, and 27% non-white), family status (48%, 31%, and 18% accompanied by children), and mean duration of current homelessness (6, 14, and 18 months). Recent immigrants had significantly better SF-12 physical health scores (49.5, 45.5, and 45.8) and significantly lower rates of mental health problems (23%, 35%, and 40%), alcohol problems (5%, 23%, and 35%), and drug problems (10%, 27%, and 48%).

**Conclusions:** Homeless immigrants in Toronto have a very different demographic profile than homeless Canadian-born individuals. Homeless people who are recent immigrants are healthier and much less likely to suffer from substance use problems than Canadian-born homeless people. However, mental health problems are relatively common among homeless immigrants. Programs to assist homeless immigrants should take these findings into account.

**09-05 Undocumented migrants in Geneva, Switzerland: Geographical origin vs. legal status as risk factor for tuberculosis**

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**Background:** More that 70% of the undocumented migrants living in Geneva originate from countries in Latin America where the prevalence of tuberculosis (TB) is 5 to 50-fold higher than in Switzerland. Undocumented migrants were defined as migrants living in Geneva without legal residency permit. We estimated the relative prevalence of chest X-rays suggestive for tuberculosis (TB) of undocumented migrants compared to the general population in Geneva, Switzerland.

**Methods:** During October-November 2002 an estimated 500 undocumented migrants were invited to participate in a TB screening program; results were compared to 12,904 age-matched participants from 1992 through 2002, in a general TB screening program conducted at various Geneva workplaces. All chest X-rays were analyzed by the same pulmonary specialist physician.

**Results:** Of all undocumented migrants solicited, 206 were included (36% male, 64% female, mean age 36.7±SD years, 82% from Latin America). Undocumented migrants had more TB-related fibrotic signs (10/206=4.9% vs. 154/12,904=1.2%, p<0.001) but no active TB. The odds of having TB-related fibrotic signs were significantly higher in Latino Americans (odds ratio (OR) 2.7, 95% confidence interval (CI) 1.6–4.7) and undocumented migrants (OR 2.1, 95% CI 0.9–4.7) although not statistically significant. The OR of being Latino-American and undocumented migrant was 5.5 (95% CI: 2.8–10.8).

**Conclusions:** Chest X-ray screening identified a higher proportion of TB-related fibrotic signs among undocumented migrants than local controls. No active case of
TB was identified in the convenience samples. Emphasizing easy access to health care is mandatory in this population, taking into account difficulties encountered in implementing systematic screening.

09-06 Urban-rural migration & health/quality of life in homeless people

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Homelessness is a growing problem throughout BC. There are challenges with absolute homelessness, hidden homelessness and those at-risk for homelessness. Persons living in poverty, First Nations, street-involved youth, persons with disabilities, and immigrants are at elevated risk. Our community partners and service providers identified urban-rural homelessness as an area of concern as homeless migration has significant potential implications for urban health issues. We were interested in understanding the nature/impacts of rural-urban migration of the homeless and those at-risk. We interviewed service providers in Kelowna and Vancouver to collect information on their perspectives and opinions on homeless migration. Semi-structured interviews were also done to collect information from the clientele at homeless shelters (E.g., demographic, self-reported health status, health behaviors, and service utilization). We will report on qualitative and quantitative analyses used to characterize the migratory patterns of the homeless, the nature of their social networks, and impact of their migration on health status, health behaviors, and use of health and social services. Finally, we will discuss the implications for developing and implementing policies and programs to address housing, health and social services needs.

09-07 Voluntary termination of pregnancy (TOP) and reproductive health in undocumented migrants

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Background: Undocumented migrants were defined as migrants living in Geneva without legal residential permit. Undocumented, pregnant migrants are known to have high proportions of unintended pregnancies; furthermore prevalence of urethritis by Chlamydia trachomatis infection is unknown. We aimed to describe the socio-demographic characteristics of undocumented migrants undergoing voluntary termination of pregnancy (TOP) and compare their health problems and use of preventive measures to the local population with residency permit.

Methods: This cohort study included all undocumented migrants deciding TOP and presenting to a health care facility between March 2005 and October 2006. The control group consisted of a systematic, prospective sample of women with legal residency status undergoing TOP during the same time period. A questionnaire was systematically administered to both groups in a face-to-face interview. Chi-square and Student’s t-tests were used to compare the groups.
Results: 175 undocumented women underwent TOP at the hospital. They came mainly from Latin America (78%) with a mean age of 28.4 years (standard deviation (SD) 5.7). More undocumented women reported lacked contraception compared to controls (23% vs. 14%, p=0.04) but past history of TOP was similar in both groups. Current Chlamydia trachomatis infection was frequent (12% vs. 4% in controls, p=0.003). Undocumented women’s first contact with a health professional occurred later in pregnancy than the control group (7.6 weeks [SD 2.5] vs. 6.6 weeks, [SD 1.7], p<0.001). Access to preventive measures was difficult: 21% of undocumented women never had cervical cancer screening (controls 6%, p<0.001) and 75% had no knowledge of emergency contraception (controls 23%, p<0.001). Undocumented women experienced violence more frequently than controls (9% vs. 3%, p=0.03).

Conclusion: This population of undocumented, pregnant migrants comprised mainly young Latino-American women. The study identified a high prevalence of Chlamydia infection, higher exposure to violence and insufficient access to reproductive health.

Neighborhood-level Influences

10-01 Asthma and air pollution in the Bronx: Using the cadastral-based expert dasymetric system (CEDS) to improve population mapping and understanding the spatiality of disease in urban areas
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Background: This study’s objective is to develop a more accurate way to map and estimate population distribution, in order to better understand the spatiality of disease and environmental impact on communities. A case study of asthma and air pollution in the Bronx, New York, illustrates this new method, the Cadastral-based Expert Dasymetric System (CEDS).

Methods: The Bronx has a childhood asthma hospitalization rate 700% higher than the rest of New York State. Our previous research using Geographic Information Systems (GIS) found a spatial correspondence between Bronx areas having high asthma hospitalization rates and close proximity to major air pollution sources. In the present study, conventional methods of mapping population are compared with the newly-developed CEDS, an interpolation method using cadastral data, land-use filters, modeling by expert system routines, and validation against census enumeration units.

Results: CEDS shows that asthma hospitalization risk due to proximity to pollution sources is greater than previously calculated when using traditional disaggregation methods. Traditional methods predicted that it is up to 66% more likely for people near air pollution sources to be hospitalized for asthma than people outside these areas (p<.01). Using CEDS, these odds ratios are further increased to 72%, reflecting more precisely the actual locations of population, and therefore obtaining more accurate rates of asthma hospitalizations. In hierarchical regression analysis, even after controlling for potential confounding factors (e.g., race/ethnicity and poverty status), the correlation between asthma hospitalization and proximity to air pollution sources remains significant.

Conclusions: CEDS provides a more realistic model for population distribution and exposure, creates an improved denominator, and thus estimates health outcome rates with increased accuracy. There is a significant difference in results amongst the
population estimation techniques and consequent potential disparities in accuracy when dealing with complex urban environments.

10-02 Compositional and contextual dimensions of neighbourhood and their relation to body mass index in older adults

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Background: There is growing evidence that neighborhood level factors may have a substantial impact on physical and mental health. However, these characteristics tend to be highly collinear, as they reflect different aspects of the physical and social environment that tend to occur together. To overcome this problem, a number of studies have used factor analysis to derive parsimonious dimensions of neighborhood-level features. However, most of these have focused on census derived factors or on other contextual variables limited to a particular exposure of interest.

Methods: We applied factor analysis to data from a comprehensive geospatial database of neighborhoods in New York City (NYC) to identify theory-driven dimensions that reflect both compositional and contextual factors, and tested their applicability in a cohort of older adults. We first derived compositional dimensions of neighborhood-level characteristics using the US 2000 Census. We then undertook factor analysis of a range of variables from secondary administrative data and representative surveys of residents to identify contextual dimensions reflecting the physical and social environment. We used multilevel models to examine the impact of these variables on Body Mass Index in 808 older residents of NYC.

Results: Census variables loaded onto three compositional dimensions: socioeconomic status, residential stability and ethnicity. Other contextual variables loaded onto five further dimensions: crime, mixed land use, neighborhood decay, through routes, and street characteristics. In adjusted multivariable analysis accounting for individual level factors including income, land use mix and street characteristics (proximity to bus stops, high tree density, high intersection density) were associated with lower BMI while residential stability was associated with higher BMI.

Conclusion: This model of compositional and contextual neighborhood dimensions derived from the census, other secondary data and representative survey allows a comprehensive assessment of neighborhood effects. The urban environment may have a substantial impact on the BMI of older adults.

10-03 Do neighbourhood effects on child mental health depend on who rates the outcome? Exploring differences between children’s and parents’ reports of child depression

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Background: A growing body of literature suggests that neighbourhoods have important implications for residents’ well-being. However, relatively little remains
known about which neighbourhood attributes (e.g., socioeconomic status, safety) are most salient to residents’ health. Moreover, this literature places much emphasis on parental reports of neighbourhood conditions and child health without recognizing children as potential informants. The purpose of this study was to examine the overlap between child and parental reports of child depression and explore whether similar neighbourhood attributes would predict the health outcome if it is measured by different respondents.

**Method:** 111 young adolescents and their parents in three New York City neighbourhoods completed surveys on their perceptions of neighbourhood attributes (quality, safety, physical and social disorder) and child depression. Neighbourhood information was also collected via neighbourhood observations (social and physical disorder) and census data (socioeconomic status, residential stability).

**Results:** Findings revealed that there was no overlap between child and parent assessments of child depression. Separate multivariate models predicted each depression outcome from child and parent perceptions of neighbourhood conditions, neighbourhood observations, and census data and found that only children’s assessments of neighbourhood conditions directly related to children’s ratings of depression. None of the neighbourhood attributes predicted parents’ ratings of child depression.

**Conclusions:** Relationships between neighbourhoods and child health depend on the informant rating the outcome. Since children can be successfully involved in research and given the subjective nature of many mental health conditions, future research should incorporate children’s voices and perceptions more fully in neighbourhood research concerning them.

**10-04 Exploring constructs related to neighbourhood social interaction through systematic social observations in Baltimore and Toronto**

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**Background:** Systematic social observations (SSO) are quickly becoming a popular method for measuring neighbourhood attributes in urban health research. In this approach, trained observers rate neighbourhoods in terms of physical (e.g., land use, trash, graffiti) and social (e.g., people’s behaviors) conditions. Despite increasing research, relatively little is known about the various dimensions that can be measured through this methodology and how well these constructs translate across different cities. The purpose of this paper was to examine and compare SSOs conducted in Baltimore and Toronto for underlying scales tapping neighborhood social processes (e.g., interactions, cohesion).

**Method:** A total of 1135 residential blocks in Baltimore and 176 blocks in Toronto located in neighbourhoods varying in terms of socioeconomic status were selected. SSO ratings were conducted for each block.

**Results:** Constructs and sub-scales related to neighborhood social processes were first conceptually developed based on previous neighbourhood research. Dichotomous factor analysis was then performed to determine whether the data supported the hypothesized scales. Findings support only one scale, social interactions, in Baltimore comprising the following items: children under adult
supervision, people socializing in mixed racial groups, adults socializing, and residents reacting to raters.

**Conclusions:** SSOs can successfully measure neighbourhood social processes, but findings from one setting may not translate to other environments. Future directions for neighbourhood and health research utilizing SSO will be discussed.

### 10-05 Home is where the HAART is: An examination of the factors affecting neighbourhood perception for people living with HIV/AIDS

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**Background:** Previous research has linked social capital with health outcomes and service utilization. In this investigation we seek to understand the factors affecting perceived neighbourhood quality and cohesion among people living with HIV/AIDS in British Columbia (BC).

**Methods:** An interviewer-administered survey collected information concerning socio-demographic information, stigma, depression, neighbourhood satisfaction, food insecurity, and quality of life. Categorical variables were compared using Fisher's Exact Test and continuous variables using the Wilcoxon Rank-Sum Test. Multivariate analyses were conducting using multivariable linear regression.

**Results:** The Longitudinal Investigation into Supportive and Ancillary health services (LISA) project is an open prospective cohort of the BC Centre for Excellence in HIV/AIDS' Drug Treatment Program. As of May 2008, the LISA cohort included 370 participants. Being food secure increased a person's perception of neighbourhood quality and cohesion by 5% over those who were not food secure. People who had stable housing had a 12% increase in their perception of neighbourhood quality and a 5% increase in their perception of neighbourhood cohesion over those who did not have stable housing. Males had a higher perceived neighbourhood quality and cohesion than females. Current use of illicit drugs and depression were found to influence perceived neighbourhood quality but not cohesion.

**Conclusions:** Food and household security were both significantly associated with perception of neighbourhood quality and cohesion. Our results indicate that in BC interventions focused on food security and stable housing could help optimize HIV treatment. Currently, there is a need to further investigate the impact of neighbourhood on the health of people living with HIV/AIDS.

### 10-06 Neighborhood-level determinants of obesity in New York City

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**Background:** Neighbourhood characteristics such as the availability of food and fitness resources are proposed determinants of obesity but are seldom modeled simultaneously.

**Methods:** Individual-level obesity data from the 2005 New York City Community Health Survey (n=9,816 persons, 34 neighbourhoods) was combined with neighbourhood data about: the availability of food stores, fitness facilities, emergency food programs, parks, crime, land use and area-SES and demographics.
The neighborhood-level distribution of obesity and area characteristics was evaluated and mapped. Bivariate correlations assessed associations between the availability of neighbourhood amenities with area-income and racial/ethnic composition. Multilevel statistical models examined whether the specified neighbourhood features significantly predict an individual’s odds of obesity (BMI ≥ 30 kg/m²) above traditional individual-level factors.

**Results:** Obesity prevalence was 20% in New York City, but neighbourhood rates ranged from 7% to 32%. Neighbourhood availability of food and fitness amenities differed substantially and correlated with area composition. Neighbourhood income was significantly associated with the availability of supermarkets, restaurants and fitness facilities, and fewer small grocers, convenience stores and crime rates (p < 0.05). However, fast food chains and snack and beverage vendors were also more common in wealthier neighbourhoods. Individual-level obesity was significantly associated with individual-level demographics, SES and lifestyle factors, but additional variance was explained by neighbourhood characteristics. For example, decreased availability of large supermarkets and fitness facilities were consistently associated with obesity and may serve as potentially modifiable loci for intervention.

**Conclusion:** Both neighbourhood and individual-level factors influence obesity. Next steps include comparing New York City to other U.S. and Canadian cities.

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**10-07 Personal geographic range and HIV/STD transmission**

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**Background:** Based on the hypothesis that endemic transmission of HIV/STDs in urban areas is a function of multiple risk-taking, underlying network structure, and limited geographic range, we are conducting a study in the inner cities of Atlanta GA that simultaneously measures these factors.

**Methods:** We use targeted ethnographic methods to recruit subjects in these communities; administer a standard survey questionnaire that requests information about demographics, risk behavior and network associations; and obtain specimens for HIV/STD testing. We ask participants to specify their “center of activity” and to describe their personal geographic range in detail. We geocode all points or, if necessary, take direct GPS readings. A polygon is constructed from each respondent’s geographic profile, and the polygons are overlaid so that color intensity is proportional to the number of participants within the area. The centers of activity are displayed as circles, with size proportional to the number of respondents that name a particular center of activity.

**Results:** Pilot analysis and visualization revealed that the first 200 respondents named some distant sites, but most had a geographic range of 3–4 km. The majority of polygons overlapped in a space of <1.0 km (approximately 2–3 city blocks). That intense overlap coincided with the predominant centers of activity. Persons in lower risk areas have a less restricted geographic range than do persons in higher risk areas.

**Conclusion:** Preliminary evaluation suggest that the geographic portion of this hypothesis may be substantiated. Persons at risk for HIV/STDs tend to cluster in a small geographic space and have a constricted personal geographic range. Further analysis will determine if the interaction of risks, networks, and geography is critical for the maintenance of diseases endemicity.
10-08 Spatial analysis of neighborhood stability and HIV incidence in the Portland, Oregon metropolitan area

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Background: While existing research suggests that neighborhood disorganization is associated with disease transmission, there are methodological challenges to conceptualizing and measuring this relationship. This cross-sectional study sought to quantify neighborhood social stability and assess its relationship to HIV incidence in one U.S. metropolitan area.

Methods: Block groups within the five-county metropolitan area (N=1012) were stratified by county and z-scores computed on four stability variables based on U.S. Census 2000 data: income, long-term residence, lack of residential crowding, and owner-occupied housing. These z-scores were summed to create the index score for each block group. HIV diagnoses from 2002–2006 (N=1529) with reporting addresses within the five-county area were then geocoded to the block group level to measure neighborhood incidence. A geographic information system (GIS) and bivariate correlation analyses were used to assess the association between the social stability index and incident HIV diagnoses.

Results: Block groups within the study area varied in both index score and number of HIV diagnoses. Visual inspection suggested that social conditions and HIV incidence may co-vary given higher incidence in areas of lower stability.

Conclusions: Spatially explicit representations of social determinants of health are a powerful tool for targeting locations and monitoring the impact of public health interventions. Our social stability index offers a relatively simple method for developing such representations using data that is publicly available and readily comparable across different parts of the U.S. Application of this and similar techniques can allow for the engagement of a wider array of participants in the emergent discussions about place and health.

10-09 Utility and feasibility of a rapid assessment tool for small area health needs in a metropolitan Canadian context

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Background: Routinely collected data sources lack adequate information on neighbourhood level health outcomes. Such data would be particularly useful for regionalized health authorities to identify small-area health needs. This study developed and pilot tested a rapid assessment tool for small-area health needs to assess health status and health needs in four low-income Toronto neighbourhoods (Eglinton East, North St. Jamestown, South Parkdale, Weston).

Methods: The survey was primarily derived from the Canadian Community Health Survey (CCHS) and other valid Canadian health questionnaires. Respondents were randomly selected and completed a face-to-face interview between August 2007 and
March 2008. Associations between three health outcome variables (self rated health status (SRHS), frequency of alcohol intake, and time since last dentist visit) by low-income neighbourhood (LIN) were examined. Frequencies of the health outcome variables were also compared to CCHS data. Sample size included a total n=785.

**Results:** Results yield significant neighbourhood differences in frequency of alcohol intake (p=0.007) and time since last dental visit (p=0.001). Health outcomes were poorer among the LINs in comparison to CCHS data. Most notably, among those who drink alcohol, 36.7% of CCHS respondents, versus 59.3% of LIN respondents consumed alcohol “2–3 times a week” or more. This level of alcohol consumption varied between the LINs, from 47.0% in Eglinton East to a high as 70.1% in St. Jamestown, almost twice the CCHS statistic.

**Conclusions:** Findings demonstrate the utility and necessity of neighbourhood level survey methods in assessing health status and health needs in a Canadian metropolitan setting. With appropriate implementation, the methodology may provide critical data for healthcare decision-makers.

**Urban Health from a Global Perspective**

**11-01 ASPIRE: Advances in screening and prevention for reproductive cancers: An international women’s health initiative in Kampala, Uganda**

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**Issues:** New molecular technologies and sampling methods offer opportunities to decrease barriers to cervical cancer screening programs in developing countries, where this preventable infectious disease remains a leading cause of mortality in women. Rapidly urbanizing centres are priority settings to explore optimal use of these innovations in these countries.

**Description:** Working in collaboration with existing health outreach programs and women’s centre in Kisenyi, an impoverished urban district parish community in Kampala, Uganda, we plan to offer women opportunities to provide a self obtained vaginal specimen in various community based settings. Specimens will be tested for human Papillomavirus using an appropriate technology (Fast HPVα), and specimen testing will be conducted locally at the Kisenyi Community Health Centre (CHC). Women who test positive for high risk HPV will receive a colposcopy and a definitive cryotherapy treatment for pre-invasive cervical cancer lesions, if necessary, at the CHC. Women with evidence of invasive cervical cancer will be referred to Mulago Hospital, Kampala.

**Lessons learned:** There is high interest in dissemination of newer technologies to decrease health disparities among our health care and community partners. Results from a project planning day, held with community partners in Kisenyi, will be presented to highlight perceived challenges and community centered opportunities to mobilize women to participate in the screening program.

**Next steps:** A community based survey on women’s attitudes and knowledge of cervical cancer will be conducted to inform mobilization interventions and the
positioning of this screening intervention within existing public sector service provision and community led initiatives.

11-02 Deindustrialization and socioeconomic deprivation in the Baltimore-Towson metropolitan statistical area, 1980–2000

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Background: Most recent social epidemiologic research has focused on assessing the association between mezzo-level exposures, including socioeconomic deprivation, and population health. However, it may be macro-level factors such as political and economic processes that are the primary drivers of population health through their influence on the distributions of these exposures.

Objective: The objective of this analysis was to assess whether deindustrialization has influenced levels of socioeconomic deprivation in a sample of 585 census tracts comprising the Baltimore-Towson metropolitan statistical area (MSA) using Census data from 1980–2000. Our specific aims were to:

(i) develop measurement models for deindustrialization and socioeconomic deprivation;
(ii) assess the association between deindustrialization and levels of socioeconomic deprivation, and
(iii) to investigate potential mechanisms linking deindustrialization and socioeconomic deprivation.

Results: The level of deindustrialization per census tract was measured using the weighted difference in the log levels of employment between 1980 and 1990 in six occupation and industry indicators (e.g., number employed in durable manufacturing). The level of socioeconomic deprivation in each tract was measured using five indicators from the 2000 US Census. Spatial analyses showed that census tracts comprising the core area of Baltimore generally experienced higher levels of deindustrialization and socioeconomic deprivation. In contrast, tracts located in peripheral areas of the city and surrounding counties experienced lower levels of deindustrialization and socioeconomic deprivation. Results from a structural equations model showed that deindustrialization was positively associated with socioeconomic deprivation ($p<0.05$). Approximately one-third of this association was mediated by the degree of population change experience per tract between 1990 and 2000.

Conclusions: Our analyses suggest that levels of urban socioeconomic deprivation may be linked to the broader process of deindustrialization and that this association may be partially mediated by population instability. Increased attention to the adverse impacts of particular macro-level economic changes on population health is necessary.
11-03 Governance vs politics for urban health. Or are they the same?
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Background: Urban Health as a discipline encompasses the process of urbanization and its relationship with health; the analysis of specific issues within delimited geographical, thematic and/or population boundaries; social determinants of the health in urban settings; and interventions to improve health in cities. The political context of these analyses and actions are the subject of this study.

Methods: We review the scientific literature on identifying frameworks for the relationship between politics and urban health. Additionally, to identify partners in addressing the political context, we compare a group of studies (published between 2005 and 2008) on urban health issues focussing on interventions by local governments.

Results: Some studies incorporated the local political context into their analysis, and they often focused on urban governance; most highlight the importance of social capital. Few researchers stressed power relations or ideological issues. Several of the studies addressed interventions without considering any of the political implications. A classification is therefore proposed: 1) “Upper Case Politics”, where authors address structural determinants and broader political categories; and 2) “Lower Case Politics” where political processes at the local level are highlighted, and 3) “No Politics”, where authors ignore the political context altogether.

Conclusions: We present the characteristics, advantages and disadvantages of the proposed approaches, warn of the risks of “depoliticizing” urban governance and conclude with the importance of incorporating power relations into studies of urban health in order to facilitate their use for policy-makers.

11-04 New and emerging infectious disease and global cities
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Issues: Increased interconnectivity amongst “global cities” is one the defining characteristics of contemporary globalization. Our objective is to explore some of the social and political implications of the association between global cities and infectious disease spread (i.e. microbial traffic). Issues that will be examined include: how has the global city network altered the worldwide distribution of pathogens and what does this mean for the fight against diseases such as SARS in particular global cities, such as Toronto, Hong Kong, and Singapore? How were the reactions/responses to SARS different in comparing each of these global cities. What was the nature of the interactions between the WHO and public health officials in global cities during the outbreaks? This research will enable better management of future outbreaks of emerging disease by ensuring that detection, monitoring and response strategies are compatible with the current political, social, economic and ecological developments unfolding within our increasingly complex world.

Description: Our inquiry draws on interviews with numerous public health, emergency management, hospital and municipal officials, and academics within Toronto, Hong Kong and Singapore as well as World Health Organization officials in Geneva.

Lessons learned: “Older” public health methods of contact tracing, isolation and quarantine are still effective. However, the ability to implement such techniques
varies with the availability and access to public health resources, especially in light of reforms to public health. The impact of such influences are seen in the varied public health response to SARS in the three global cities studied.

**Next steps:** Future research is required into:

(i) the development of more integrated and interdisciplinary perspectives to capture the complexity of global disease outbreaks (e.g. complexity theory and ecosystem health approaches); and

(ii) research on the implications of the post-911 “new normal” ideology in the development of a global public health security paradigm.

**11-05 Overweight and obesity in urban Africa: Disease of the poor or the rich?**

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**Background:** Africa is currently experiencing a mixed epidemiologic transition with a high burden of both infectious and non-communicable diseases (NCDs). Economic transition and urbanization come with changes in nutrition and sedentary lifestyle, resulting into excess nutrients stored in the body as fat. The resulting overweight and obesity are risk factors for cardiovascular diseases and diabetes mellitus type, among others. The purpose of this paper is to describe trends in overweight in urban Africa, and to investigate how these patterns vary between the poor and the non-poor.

**Methods:** We use Demographic and Health Survey data from Cameroon (1991; 1998), Ghana (1993, 2003) and Kenya (1993, 2003). The dependent variable is women’s body mass index (BMI) defined as binary variable using the cut-off value of 30. The covariates of interest are household wealth defined as tertiles, and the time lap between the two surveys in each country. Control variables included women’s education, age at birth, and number of children. Multilevel logistic regression is used.

**Results:** All three countries witnessed a significant increased in the proportion of overweight women (p<0.01). On average, the prevalence of overweight increased from about 9% in the first survey to nearly to 17% in the second survey period. Controlling for all variables, the rate of increase was substantially higher among the poorest, though the prevalence of overweight remained higher among the richest.

**Conclusions:** Given the chronicity and cost of treatment of most NCDs, Africa can’t afford to say “we must tackle the other diseases first; we are poor nations, we cannot afford to deal with obesity”. Comprehensive, intersectoral and integrated approach including primary prevention through modifying lifestyle, need to be put in place to address the rapidly increasing burden of overweight and obesity. These policies should pay a special attention to the urban poor.

**11-06 Socioeconomic position and pattern of under- and over-nutrition in Pakistan**

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**Background:** In the West an inverse association has been reported between socioeconomic position and BMI. Conversely, in developing countries a positive association has been reported. However, very few studies have investigated the simultaneous distribution of under and over-nutrition across socioeconomic position (SEP) in developing countries.
Objectives: To assess the relationship between SEP and under and overnutrition in Pakistani adults.

Methods: In 2005–06 we conducted a cross-sectional study on adult participants (n=3874) aged ≥ 15 years residing in district Khairpur in Sindh province of Pakistan. We categorized BMI into <18.5 (underweight), 18.6–22.5 (normal BMI), 23–24.9 (pre-overweight), and ≥ 30 (obesity). SEP was based on quintile of a linear index constructed using coefficients from principle component analysis of household assets and utilities. We assessed the association of SEP with categories of BMI through multinomial regression analysis using normal BMI as reference category.

Results: After adjusting for age, sex, education level, occupation and chicken intake, there was no significant association of wealth and undernutrition while increasing wealth quintiles were positively associated with the categories of pre-overweight, overweight and obesity in comparison to normal BMI. Moreover, the relationship becomes stronger as we move along the spectrum from pre-overweight to obesity. Odds ratios for obesity across wealth quintiles ranged from 0.75 (2nd quintile) to 3.22 (5th quintile).

Conclusion: Our results suggest that Pakistani population is experiencing high obesity rates increasing with the wealth which are indicative of an advance stage of nutrition transition with undernutrition becoming less important. This highlights the importance of investing in prevention of obesity in a country where public health programs mainly focus on undernutrition.

11-07 The persistent urban health challenges of migration and informal settlements in the context of HIV: Towards the development of a framework to guide local level developmental responses in Johannesburg, South Africa

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Issues: Developing country urban contexts, such as found within South Africa, present a range of interlinked public health and development challenges to local government. Included are the persistent challenges of (1) migration to urban areas, and (2) associated increases in the number of people residing in informal settlements as pressure is placed on limited well located and adequate housing. These challenges are exacerbated in the context of HIV as found in South Africa: urban HIV prevalence is higher than rural areas, and HIV prevalence in urban informal settlements is double that of urban formal. Various models of urban health exist, however they do not deal adequately with suggestions for intervention, and none are appropriate for the complexities presented within developing country urban contexts.

Description: Three interlinked case studies, located in the City of Johannesburg, investigate migration and informal settlements as determinants of health and assess opportunities for intervention to improve health outcomes of these vulnerable urban groups. Results are synthesised to generate a more appropriate urban health framework. This will assist developing country policy planners and implementers respond to the persistent urban challenges of migration and informal settlements - in the context of HIV - in a developmental way at the local level.

Lessons learned: Migrants and residents of informal settlements, especially those infected and affected by HIV, fall within the peripheries of health and social welfare provision. A framework is required for local level policy planners and implementers to effectively ensure and sustain the public health of diverse developing country urban populations.
**Next steps:** The revised framework, which is more sensitive to vulnerable urban groups, will be piloted with an intersectoral group from the Johannesburg Metro Council. Feedback from this process will enable the finalisation of the framework and dissemination to a range of health and development actors.

**11-08 The power of the performance and quality improvement approach: Building trust and community ownership for improved healthcare in African informal settlements**

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**Issues:** In informal settlements (slums) in Africa, overcrowding, lack of legal status, and high crime, among other factors, have created disenfranchised populations that do not trust healthcare providers and that lack supportive family and community structures. In many cases, healthcare providers are un/under-trained and personally feel disinclined to serve slum clients. In these complex environments, ensuring access to quality healthcare for slum residents is challenging.

**Description:** Jhpiego has worked in two slums in Nairobi, Kenya since 2005 to bridge the gaps between healthcare providers and the communities they serve using Performance and Quality Improvement (PQI), a non-proscriptive approach that empowers stakeholders to identify what their real problems are for accessing healthcare, and then involves the communities and healthcare workers in the design and implementation of interventions to address those problems. Solutions are feasible, community-accepted and owned because they are community-created.

**Lessons learned:**

- “Traditional” supply/demand healthcare improvement approaches in African urban slums are insufficient to address slum dwellers’ real healthcare needs; lack of trust between healthcare providers and clients must be addressed first.
- Involving communities in the analysis of problems and design and execution of interventions promotes sustainability beyond the life of donor-funded programs.
- PQI provides a framework for not only improving health, but also provides a framework for building community trust and bonds that have benefits far beyond health.

**Next steps:** Donor programs must focus on urban slums as an ongoing health crisis. To meet the highly variable and ever-changing healthcare needs of complex urban slum environments, programs must utilize participatory intervention approaches.

**Urban Physical Environment and Health**

**12-01 Are “activity-space” environments important for understanding racial/ethnic and socioeconomic disparities in obesity risk? A pilot study**

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**Background:** Most extant research of environmental influences on racial/ethnic and socioeconomic disparities in obesity risk has focused on residential neighborhoods.
Yet, most individuals’ routine daily activities occur in a larger area (activity space) which confers additional environmental exposures. Due to differences in financial, physical, and social resources/constraints, the size and quality of individuals’ activity spaces may differ by race/ethnicity and socioeconomic status (SES). In this presentation, we will describe conceptualization of, methodology for assessing, activity-space environmental influences on obesity risk and compare activity-space characteristics by individual race/ethnicity and SES.

Methods: For 4 or 7 days, 39 African-American (67%), Latino (26%), and White/Other (8%) adults, participating in a walking intervention in Detroit conducted by the Healthy Environments Partnership (a CBPR partnership), wore a wrist-mounted global positioning system (GPS) to measure where they moved/traveled. Physical activity and dietary intake were measured using a pedometer and three 24-hour recalls, respectively. Activity-space measures were derived from GPS data, and activity-space size and environmental features (e.g., supermarkets, restaurants, parks, land use, street patterns) were measured using GIS.

Results: Characteristics of participants’ activity spaces varied considerably. In this select unrepresentative sample, we found that activity spaces were larger among those who were African-American (vs. Latino) and of higher SES (e.g., owned car, employed, >high school education, annual income >$40,000). We also found some racial/ethnic and socioeconomic differences in the density or quality of activity-space environmental features.

Conclusions: The potential of activity-space environments for understanding racial/ethnic and socioeconomic disparities in obesity risk warrants further investigation.

12-02 Changes in health status, quality of life, and alcohol and drug use among homeless and vulnerably housed adults applying to a supportive housing program

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Background: Supportive housing may help improve the health of disadvantaged individuals. This study examined changes in health status, quality of life, and alcohol and drug use disorders among homeless and vulnerably housed individuals in Toronto who were applying to a supportive housing program.

Methods: We enrolled 112 individuals who underwent a baseline interview before they were informed whether they had been accepted into the housing program. Participants were re-interviewed every 6 months for up to 18 months after their move-in date (for applicants accepted into the housing program) or after the date of their non-acceptance notification (for applicants who were wait-listed). Data were obtained on demographics, health status (SF-36), quality of life (EQ-5D and Lehman QOL Brief Instrument), and alcohol and drug use disorders (AUDIT and DAST-20). Changes between baseline and last available follow-up among those housed and those wait-listed were compared using ANOVA and t-tests.

Results: Of 112 participants, 46 were accepted into the housing program and 66 were wait-listed. Follow-up data were available for 101 participants. Individuals
who were accepted into the housing program experienced significantly greater improvements in 2 aspects of quality of life: general life satisfaction (p<0.04) and satisfaction with living situation (p<0.002). There were no significant differences in changes in health status or substance use between the two groups.  

**Conclusions:** Compared to those not accepted, homeless and vulnerably housed individuals accepted into a supportive housing program had significantly greater improvements over 18 months in quality of life, but not in health status or substance use.
12-04 Comparing the housing trajectories of different clusters within the homeless population in a Canadian city
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Background: Research on identifying the characteristics of different subgroups among the homeless population has been conducted mostly in the United States with homogeneous and cross-sectional samples. Our work builds on this line of research by providing findings from longitudinal research that identified and compared the housing trajectories of different subgroups among a heterogeneous sample of single homeless individuals in a Canadian city.

Method: A latent class analysis was conducted on interview data focusing on mental health and physical health problems and health service utilization collected from a representative sample of 329 single individuals who were homeless. Of this initial group, 189 (58%) were re-interviewed two years later and comparisons of the identified clusters were conducted in terms of housing status and number of days housed as well as number of moves and number of homeless episodes over the follow-up period.

Results: Our results showed that there were four distinct clusters of individuals characterized by different types and levels of severity of health problems:

(1) “Higher Functioning” (26%),
(2) “Substance Abuse Problems” (29%),
(3) “Mental Health Difficulties and Substance Abuse Problems” (23%), and
(4) “Severe and Complex Health Problems” (22%). Comparisons of the clusters found them having similar housing trajectories in terms of exiting homelessness and achieving housing stability.

Conclusions: Our findings suggest that the nature and severity of health-related problems are not playing a significant role in the ability of individuals to exit homelessness and to re-establish housing stability. Implications of these findings for social policy development and program planning are discussed.

12-05 Comparison of biogenic agents in “green” versus conventional housing
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Background: The green building movement emphasizes healthy indoor environments, energy efficiency, and environmentally sustainable construction methods. Green construction practices are increasingly prevalent. Green buildings are constructed to meet standards pertaining to composition of materials, heating and ventilation, moisture control, energy efficiency, and other important areas. While health benefits of living in green buildings may be implied because of lower chemical content, better ventilation (therefore, decreased dampness), and fewer pests, no studies
have demonstrated objectively the health benefits to the occupants. Damp indoor environments have been associated with adverse respiratory symptoms, especially among those with asthma. Dampness is often considered a surrogate measure of exposure to dust mite allergens and fungi.

**Methods:** We conducted a pilot study to compare levels of biogenic agents in apartments. We made arrangements with two older-adult apartment complexes—one constructed to "green" standards and another built to conventional standards—and recruited volunteers willing to allow sampling in their homes and who completed a questionnaire regarding their practices and experiences with their homes. Community workers vacuumed dust from the beds and the bedroom floors of the study units. Dust samples were assayed for fungi and dust mite allergens (Der f 1 and Der p 1).

**Results:** Qualitative differences in levels between green and conventional housing for fungi and dust mite allergens were found upon analysis.

**Conclusion:** Reducing the exposure to biogenic agents can provide significant health benefits. Further research is needed to determine whether green housing construction and practices result in differences in health outcomes among residents.

12-06 Coping with urban environmental stress for health and well-being: An empirical analysis of Bhopal city of India

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**Background:** Urban Environmental Stress (UES) is a result of shortcoming in urban management process, institutional framework and governance in addressing environmental concerns besides human issues. The type of development and progress has made people techno-centric instead of eco-centric but at the cost of peace, harmony, social relations, health and well-being of the urban society.

**Methods:** This interdisciplinary study assessed the perceived UES and the coping strategies of working population of Bhopal city and its relation with subjective well-being (SWB). We administered the Perceived UES Scale, the Urban Hassle Index, Satisfaction with Life Scale and Coping Scale to 224 respondents selected randomly from 33 organizations. Descriptive statistics and text analysis were used to analyze the responses.

**Results:** Despite the high level of perceived environmental problems, 61% participants perceived that city life as a whole was not highly stressful. To restore health and SWB, most commonly used relaxation promoting activities were categorized under social coping (36%), i.e., visiting family and friends within their social support network. It was followed by environmental coping, cultural coping, religious coping and coping by physical exercise. A high level of SWB despite perceived environmental problems and low coping score was found.

**Conclusions:** Appraising stress positively by appreciating the surrounding environmental resources like lakes, national parks, hills, urban forests etc can help the people develop Environmental Resilience and functional coping to further improve the subjective well-being of the people. The partnership to include environmental and behavioral professionals with local authority is important to improve the city environment.
Background: Despite wide-scale access to electricity, many low-income families in South Africa continue to rely on biomass and less-efficient fossil fuels as a cost-effective way to meet their domestic energy needs. Emissions from fuel combustion, along with housing factors, can result in respiratory infections, a leading cause of death in the country.

Methods: Using an ecohealth approach, data regarding individual time-activity budgets, housing materials and structure, energy sources used for heating, cooking and lighting, respiratory symptoms and real-time indoor air pollutant measurements (particulate matter (PM), carbon dioxide (CO2), carbon monoxide (CO) and sulphur dioxide (SO2)) were integrated. A total of 20 dwellings, displaying large variability in both housing structure and energy patterns, were sampled for 24 hours from June - August 2006.

Results: Mean indoor concentrations measured were significantly greater than outdoor concentrations and often exceeded World Health Organisation guideline values for air quality. Although PM concentrations increased with the use of increasingly inefficient-burning fuel types (gas < paraffin < wood), no significant differences in the means were found across these fuel types. No significant differences in mean concentrations were found across different housing types either. Indoor exposures were, on average, highest among very young children (ages 0–5) and elders (ages 51+). While a large percentage of the sample population self-reported respiratory symptoms characteristic of acute respiratory infections, the eldest group displayed the highest prevalence rates for all symptoms.

Conclusions: This study provided 24-hr indoor concentrations and exposures to PM10 & 2.5, CO and SO2 for low-income dwellings in Msunduzi Municipality, South Africa. It fills a gap in the current IAP literature on both a local and national level. This gap has been identified as a severe problem in South Africa when it comes to aggregating data to inform environmental health policy.

Background: Overweight/obesity represent a significant public health problem in Canada and abroad. The literature around the determinants of overweight/obesity focuses mainly on temporal trends as well as demographic and socio-economic characteristics. However, individuals are embedded within social and physical environments that play a significant role in shaping health. The objective of this paper is to identify heterogeneities associated with the relationships between overweight/obesity and individual as well as socio-environmental determinants at the individual- and neighbourhood-levels.

Methods: The data sources used are:

1) the 2003 Canadian Community Health Survey,
2) the 2001 Canadian Census and
3) the Desktop Mapping Technologies Incorporated database.
Geographical Information Systems are first employed to create neighbourhood-level variables such as residential density and land-use mix, as well as accessibility to fast food outlets and recreational centres. Multi-level analysis (MLA) is then applied to estimate the relative effects of individual- and neighbourhood-level risk-factors of overweight/obesity.

**Results:** Results indicate the marked geographical variability in the risk-factors of overweight/obesity between two urban centres (Toronto, Vancouver). MLA demonstrates the important role of the built-environment after adjustment demographic, socio-economic and behavioural characteristics. MLA also reveals the relative influence of individual- and neighbourhood-level characteristics on overweight/obesity.

**Conclusions:** Findings provide further evidence that the underlying mechanisms driving the increasing prevalence of overweight/obesity may be characteristics of the social- and built-environments. The results support the rationale that reversing current trends will require a multifaceted public health approach where interventions are developed from the individual- to the neighbourhood-level, specifically focusing on altering obesogenic environments.

12-09 Maternal health in resource-deprived urban settings: Do women’s autonomy and perceived quality of and access to care influence their utilization of obstetric care services?

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**Background:** Despite the various international efforts that have been initiated to improve maternal health, more than half a million women worldwide die each year as a result of complications arising from pregnancy and childbirth. Even by conservative standards, urban poverty in Africa is high and is growing rapidly, and it is projected that in the near future most of the region’s poor people will live in urban areas. This study uses unique data from a maternal health project conducted in the slums of Nairobi, Kenya, to investigate how women’s autonomy and perceived quality of and access to care influence their choice of place of delivery, and how they interact with household wealth and respondents’ education.

**Methods:** The dependent variable is place of delivery defined as three-category ordinal variable: out of health facility; at inappropriate and sub-standard facility; at appropriate facility. Central predictors are women’s autonomy and perceived access to and quality of care. Control variables include household wealth, women’s education, parity, age at birth, pregnancy wantedness, advice to deliver with a skilled attendant, and slum residence. Autonomy, perceived access to and quality of care, and household wealth are constructed using Principal Component Analysis. Ordered logit models are used to quantify the main and interactive effects of these covariates.

**Results:** Women’s autonomy was not associated with place of delivery. Perceptions of the quality of and access to care were significantly associated with choice of place of delivery. These effects tended to be stronger than the influences of women’s education or household wealth. They were significantly more important among lower educated or poorest women; but did not vary greatly with being advised to deliver at health facility.

**Conclusions:** To improve maternal health among these growing urban poor populations, issues of quality of and access to care should be addressed.
12-10 Mediator, moderator, or catalyst? Theoretical exploration of the relationship between transit use, walking and the built environment

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**Issue:** The contribution of public transit use in shaping the relationship between walking and different built environments has been largely overlooked. Since the relationship between the built environment and the share of transit users is well documented, and since a greater share of public transit patrons earn on average lower incomes, assessing effects of public transit service and use on walking should be explored in greater depth. I offer a theoretical and methodological exploration of the issues involved in analysing the role of public transit in a physically active lifestyle.

**Description:** I first review empirical work and present observed associations between public transit use and walking. I then present a number of challenges in methodology and unexplored avenues in the application of ecological models. My contribution to theory centers on the question: What are the mechanisms through which public transit use can influence walking and what hypotheses should be tested?

**Lesson learned:** I present research designs that can help identify mediating and moderating effects, noting the associated methodological challenges. I then offer a theoretical interpretation of the association between public transit and walking using the concept of catalyst. By typically bringing users to central areas with higher densities and a mix of services accessible within walking distance, transit use may further support walking and act as a catalyst for an active lifestyle.

**Next steps:** Further understanding travel behaviour will strengthen our understanding of the role of public transit use in walking, and may provide guidance for multimodal transportation policy evaluation and health impact assessments.

12-11 Methods for studying bicyclists’ injuries and the cycling environment

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**Background:** Bicycling is an active mode of transportation that integrates physical activity into daily life. However, safety is a deterrent to cycling in Canada, where the risk of injury is greater than in European countries. The difference may be related to the built environment for cycling. Cycling in Canada generally entails riding on roads. Northern European cities often offer dedicated infrastructure separated from motor vehicles. The relative safety of these two styles of infrastructure is the subject of a great deal of debate, but little evidence.

**Methods:** We are using a case-crossover design to study the impact of transportation infrastructure on the risk of injuries to cyclists in two Canadian cities that have varied infrastructure, cycling patterns, and climates: Toronto and Vancouver. 600 adult cyclists who attend emergency departments for their injuries between 2008
and 2010 will be invited to participate. The following infrastructure characteristics will be compared between the injury site and two randomly selected control sites along the injury trip route: 16 route types, including integration or separation from motorized and pedestrian traffic; intersection types; and presence of car parking and junctions. The case-crossover design allows the focus to be on infrastructure features; the comparisons are within a person-trip, thus controlling for personal characteristics and trip-specific weather and bicycle characteristics.

**Results:** The challenges inherent in studying cycling injuries will be presented, as will the challenges of collecting data on transportation infrastructure in diverse settings. We will provide results of reliability testing of the study instruments.

**Conclusions:** Improving cycling infrastructure should not only reduce injury risk, but, as a result, promote cycling as an urban transportation option, with attendant personal and public health benefits.

**12-12 Public Housing Relocation of Residents: A Case Study of Atlanta**

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**Overview**

The purpose of this panel is to present preliminary results from the first wave of data collection of approximately 500 public housing residents prior to being relocated in the City of Atlanta, GA. This research study is being led by members of the Partnership for Urban Health Research at Georgia State University, which includes an interdisciplinary group of scholars. Our overall goal is to document residents’ experiences before and after the relocation process, as well as assess residential, socioeconomic and health outcomes. These relocations are affecting some of the poorest families in the City of Atlanta. This unique event has important social and health ramifications not only for the public housing residents themselves but for the growing body of research on how housing and neighborhood quality play a role in either diminishing or exacerbating health disparities. Because we are an interdisciplinary group, finding to be presented will represent a range of topics including the built environment factors, food security, the impact of relocation on pre-existing health conditions, as well as overall well-being.

**Study Background**

In early 2007, the Atlanta Housing Authority (AHA) announced plans to demolish the remaining 12 public housing communities in Atlanta by 2010, effectively ending the project-based public housing program in the city. The stated goal of this plan is to de-concentrate the poverty long associated with traditional public housing communities, thus improving the health and well-being of residents by addressing the neighbourhood conditions in which they live. Relocation plans depend on Housing Choice Vouchers (formerly known as Section 8) to subsidize private market
housing for the 9,600 residents currently living in public housing. While many of these residents should be able to secure private market housing, there will be significant subgroups that will not - and often this has to do with various health issues. Many may face significant barriers, such as finding suitable available housing in the market and the availability of services in the new neighbourhoods like transportation, and health care. At particular risk are seniors and those with mobility issues or other chronic health problems.

**Methods**

We are currently surveying a random sample of public housing residents to acquire baseline information - including data on neighbourhood and housing quality, pathways into public housing, health status, food security, access to needed services, as well as the perceived psychological impacts of relocation. We have supplemented this data with secondary census data as well as data on voucher housing, foreclosures, crime and local amenities. We are also in the process of collecting qualitative data on the relocation process itself to further enhance our understanding of how relocations work, and how they impact the lives of poor Americans. We plan to survey the residents again in three follow-up waves of data collection to investigate the changes in their lives brought about by relocation.

**Paper #1:** “Where is Voucher Housing Located in Atlanta and will it deconcentrate poverty and racial segregation?” Deirdre Oakley

Using U.S. Census data and administrative data from the Department of Housing and Urban Development, we examine patterns of voucher housing locations. Using spatial analysis, we find that voucher housing is located primarily in African American neighbourhoods with high poverty concentrations. Thus, the shift from project-based public housing to voucher-based housing reinforces existing concentrations of poverty and racial residential segregation.

**Paper #2:** “Impact of the Forthcoming Relocations on Concerns, Attitudes, Health and Well-Being of Public Housing Residents” Erin Ruel

Preliminary results suggest that residents do indeed want to move out of public housing. Fifty percent are excited to move into voucher housing. However, the prospect of relocation is adding a significant amount of stress to residents’ lives. Over 40 percent mentioned feeling stressed or anxious in the last four weeks and another 31 percent have felt sad or depressed in the last four weeks. Also, 62 percent are worried about having enough money to cover rent and utilities when they move to voucher-housing. A further 70 percent are worried there is not enough subsidized housing available.

This is a population with many serious health problems. Twenty-two percent have diabetes, 57 percent have high blood pressure, 25 percent have asthma, 14 percent have heart disease, and 32 percent have arthritis. In particular, residents are concerned about where they will relocate to and whether or not they will have the access they currently have to transportation, employment, schools and needed
services and amenities. They are also concerned about what kinds of neighbourhoods they will end up in and whether the neighbours will be part of their support networks as their current public housing neighbourhood have been. Access to services, including healthcare is of particular concern to the seniors.

**Paper #3:** “Food and Financial Security and Participation in Food Assistance Programs” Murugi Ndirangu

In this paper we ask how public housing residents are faring in terms of food and financial security. Preliminary findings suggest that most residents of public housing are secure. Seventy-five percent of public housing residents never or rarely had to borrow money to pay their bills. Sixty-five percent never or rarely run out of food every month. Eighty-one percent rare skip or make smaller meals at the ends of each month. Eighty-five percent of residents never or rarely get food from emergency food banks or shelters. Forty-four percent spends their entire income each month, but another 33 percent do have a little money left over at the end of every month. Finally 71 percent are authorized to receive food stamps and twenty percent participate in the WIC program.

**Paper #4:** “Perception of the Public Housing Built Environment.” John Steward

This descriptive analysis examines perceptions of existing indoor and outdoor neighbourhood environments of the public housing communities that the residents live in prior to relocation. Ultimately, we will compare these data to the new subsidized housing that residents will be moved into. W will answer the question, does voucher housing improve the built environment of public housing residents? Preliminary findings suggest that a little over half of the respondents are very attached to their public housing homes and 45% are satisfied with their homes. Fifty-seven percent believe there is too much crime in their neighbourhoods. Thirty six percent of residents rated their home as good and another 40 percent rated their home as fair. Forty-six percent of our respondents lived in public housing when they were children. Very few (less than 10%) said they had plumbing problems, water problems, electric problems, broken windows, non-working stoves or refrigerators. Over 65 percent had problems with pests such as mice, rats or roaches. Public housing is very close to public transportation and for the seniors, very close to health care and stores.

**Preliminary Conclusions**

The program in Atlanta to demolish public housing and replace this stock of housing with subsidizing private market housing is a pilot study that if deemed successful, will most likely be implemented by cities across the U.S. Thus, it is very important to fully examine the life of poor citizens both in public housing and after they are moved to private market housing. Although there are residents who would rather stay in public housing, our preliminary findings suggest that most want to move to subsidized housing, but they are very concerned about where they will live following relocation, and if they can afford it. Results show that now, in public housing, residents are mostly making ends meet and live in adequate housing. Their health is bad, but we do not know if their health is bad because they live in public housing or if they live in public housing because their health is bad.
12-13 Tools for healthy travel: A web-based bicycle trip planning tool for planners and the public

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Background: With the growing concerns around physical inactivity, traffic congestion and greenhouse gas (GHG) emissions, cycling is increasingly promoted as a sustainable transport mode, and one that allows for longer trip distances than walking. We developed a bicycle trip route planner for use by the general public as well as transportation planners for the Metro Vancouver region, Canada.

Methods: Google Maps is the foundation of the system, giving the general public a familiar tool to seek optimized commuting routes. Javascript and HTML (HyperText Markup Language) were used to develop the client interface, with C# used for trip planning. Web services and AJAX (Asynchronous JavaScript + XML) technologies were used to create an interactive application with rapid data delivery. The approach uses topology to minimize data storage redundancy and searches node index tables to maximize efficiency in the selection of optimal routes.

Results: The bicycle trip planning tool (beta version for Internet Explorer) is available at: http://gis.soeh.ubc.ca/cycling/default.aspx. The planner allows for preferential route selection according to variables known to influence bicycling (e.g., distance, elevation gain, route features including bicycle facilities and green spaces, air pollution). The outputs include a map of the optimized route marked with elevation slope, intersections with bicycle-friendly signals and transit stops, as well as the calculated travel time, elevation gain, calories burned, and greenhouse gas emissions avoided (versus driving).

Conclusion: This tool can help promote bicycle travel as a form of active transportation, and contribute to improvements in public health and transportation planning in the urban setting.

12-14 Urban mass transit noise levels

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Background: Urban growth largely is largely being driven and supported by mass transit infrastructure. While the use of mass transit has many environmental and public health benefits, there may also be certain disadvantages, including ridership exposure to excessive levels of noise related to mass transit, especially in older systems. To estimate the potential risk to riders, an extensive noise survey of NYC mass transit systems was conducted.

Method: Time-integrated noise levels were measured in a representative sample of mass transit systems (subways, buses, ferries, tramways, and commuter railways) using Type II noise dosimeters. Levels were measured on platforms, stations, and inside vehicles.

Results: Of all systems measured, subway cars and platforms had the highest associated mean equivalent continuous noise levels (Leq) and maximum noise levels (Lmax), at 80.3 and 90.2 dBA, respectively, followed by trams, with an Leq of 77.0
and Lmax of 88.7 dBA. All transit systems had Leq levels above 70 dBA, the threshold whereby noise-induced hearing loss is considered possible.

Conclusions: Every form of mass transit measured had noise levels exceeding exposure guidelines from the World Health Organization and the U.S. Environmental Protection Agency. Exposure to such high levels, and for significantly long periods of time could have a measureable effect on hearing loss. These results suggest that cities should employ noise control efforts for mass transit and encourage individuals to use personal hearing protection in to prevent the harmful effects of exposure to mass transit-related noise.

12-15 What happens over time: Housing and health experiences of foreign born and Canadian born respondents to the Panel Study on Homelessness
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Background: The Panel Study on Homelessness in Ottawa is a longitudinal study that followed a cohort of diverse people who were homeless. The objective of the study was to identify resources that facilitated and risk factors that impeded their ability to leave homelessness, and to explore the relationship between homelessness and health.

Method: A sample of 412 people representing five subgroups of individuals based on age, sex, and family status were interviewed while they were homeless. Of this group, 255 (62%) were re-interviewed two years later. A combination of quantitative and qualitative interview methods was used in both phases of the study. Initial and follow-up interviewes included closed and open-ended questions that asked individuals about their housing history, health status, and health and social service utilization.

Results: The presentation will focus on findings emerging from a comparison of study participants who were foreign born (n=99) to study participants who were Canadian born (n=313) on health-related characteristics and housing trajectories over the course of the study. In particular, results from comparisons of the health experiences and housing trajectories of foreign born respondents to their Canadian born counterparts will be examined.

Conclusions: Differences in the health experiences and housing trajectories of foreign born individuals who are homeless relative to Canadian born individuals who are homeless will be discussed in the context of their different backgrounds, demographic characteristics and the institutional support available to them.

Urban Social Environment and Health

13-01 “Sisters in town”: Risks and challenges of commercial sex workers in urban Ghana
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HIV/AIDS interventions in sub-Saharan Africa have focused on commercial sex workers due to their observed role in transmission. Less discussed is the poor
psychosocial environment in which they work and the violence they experience, which have short and long term health risks. This paper examines reported risks and challenges that commercial sex workers face and coping mechanisms adopted in a country where commercial sex is illegal.

Data was collected among commercial sex workers in January 2008 before the African Cup of Nations football tournament hosted by Ghana. It involved 105 respondents in Sekondi-Takoradi, one of the four venues for the tournament. Respondents were recruited through accidental sampling and interviewed using structured questionnaires.

The mean age of respondents was 32 years, and they reported about 5 clients per day. Major risks reported were fear of infection of HIV/AIDS, violence/abuse from clients and harassment from police. Over 90% reported condom use to counteract HIV/AIDS, but they were virtually defenceless against violence and harassments. None had registered with the National Health Insurance Scheme. In the hostile working environment, they had formed support groups but this did not seem to be enough. This is a group with varying health needs including those arising from their work, violence, abuse and harassment. Due partly to their work and associated stigma, they are unable to avail themselves of opportunities for health care and protection. Thus, they constitute a hidden urban social group who need to be targeted for support beyond HIV/AIDS/STI prevention.

13-02 Access to and level of information on health care and nutrition among extremely poor people in urban Bangladesh

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Background: Health and nutrition related information and maternal and child care practices of urban extremely poor people are often scanty and inappropriate. To contribute in designing appropriate health care system for them it is necessary to know their current information access and actual health care practices.

Method: Qualitative information on access to information and practices of maternal and child care was collected in selected slums of Dhaka, Chittagong and Khulna. Twenty-four focus group discussions were conducted with 179 extremely poor people, including pregnant and lactating women, mothers of children under five years of age, women-headed households and Primary Health Care (PHC) providers.

Results: Urban extremely poor people had very limited access to media and thus to health and nutrition information broadcasted there. Neighbours, relatives, friends and formal and informal PHC providers were their main information sources for ante- and post-natal check-ups (ANC, PNC) and child care but extent and quality of the information were often inadequate. Out of 136 pregnant and lactating women, four knew about the benefits of having at least three ANCs and four received PNC. Mothers of children under five had limited knowledge of infant and young child feeding (IYCF) and few (12) practiced appropriate IYCF. Among PHC staff, insufficient knowledge of IYCF, inadequate counselling skills and workload aggravated the situation.

Conclusion: Improving knowledge and skills of PHC providers and appropriate information sharing could address the knowledge-practice gaps identified and increase access to information among urban extremely poor people.
13-03 Examining the public’s level of support for government addressing social and economic policy in order to improve health in the U.S.

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**Background:** Despite a growing worldwide understanding that a variety of social and economic factors are major determinants of health, discourse in the U.S. about policies to improve health focuses on health care policies to the exclusion of social and economic policies. The main objective of this study is to examine U.S. adults’ level of support for the government addressing social and economic policies in order to improve health, and to examine determinants of this level of support.

**Methods:** Data are from a phone survey of a random sample of 1,264 adults in Wisconsin, conducted between September 2006 and February 2007, using random-digit dialing, with a 38% response rate.

**Results:** Level of support for government improving health through health care policy and health insurance policy is much higher than support for government addressing social and economic policies to improve health. Regression analyses show that there are many determinants of level of support for government addressing social and economic policies to improve health, with a strong determinant being the degree to which people believe that poor health is a big societal problem in the U.S. Other determinants include: being a Democrat or a woman, having a belief in strong government, and having a lower sense that personal control is responsible for health.

**Conclusions:** Unless people in the U.S. believe that health is a big societal problem, they are not likely to be very supportive of government prioritizing efforts to address social and economic policies in order to improve health.

13-04 Focus on social determinants of health and equity at the U.S. Centers for Disease Control and Prevention (CDC): Moving the Agenda forward

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A growing literature continues to document persistent and strong relationships between social systems and structures and good or poor health. Intervening on social determinants of health and equity including poverty, racism, housing, education, employment and access to healthy food is imperative if all people are to achieve optimal health and health inequities are to be eliminated. A goal of health equity has relevance for all people but is of particular importance for urban populations who more likely to experience overcrowding, concentrated poverty, residential segregation or other socially determined conditions underlying poor health outcomes. The development of research, program and policy initiatives addressing social determinants of health has gained momentum across CDC over the past 8 years. This presentation will provide an overview of select activities that explicitly address health equity, including administration led initiatives; Center-led research and program initiatives; cross-agency employee-led workgroups; and, the recent convening of an Expert Panel on Social Determinants of Health to provide recommendations on public health’s and CDC’s unique role in addressing social determinants of health. Intervening on social determinants of health and equity requires new ways of thinking.
about our work, including developing approaches, strategies, and partnerships that question existing assumptions about the roles and boundaries of public health.

13-05 Housing and precariousness: Lone mothers on income assistance quest for a home

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The lack of affordable, safe housing has been identified in both the scholarly literature and the popular press as a key determinant of health inequalities (Dunn 2000). However, relatively little research has systematically investigated the relationship between housing, socio-economic status, and health outcomes. This paper, using qualitative, longitudinal data collected on the life experiences of lone mothers on income assistance, illustrates the precariousness and vulnerability of these women and their children when they lack access to such housing. The study investigated how the reductions and changes in income assistance benefits and regulations have changed the goals, eligibility and expectations of lone mothers on income assistance. The study’s team composed of academic and community-based researchers conducted open-ended interviews twice a year from May 2003 to November 2006 with sixteen lone mothers in East Vancouver. The longitudinal nature of the study permitted an understanding of the interactions over time of policy changes in their evolving contexts, revealing the gap between aspirations and achievement, as well as the interaction between constraints and supports.

Our findings reveal that their unstable housing limits their ability to move forward in their lives and contributes to dangerous provisioning choices such as lifestyle employment, placing themselves and their children at risk. This housing also is a significant factor in their family’s health status, precipitating asthma and other illnesses. Housing that lack social supports further isolate these women and their children. Our research demonstrates the significant differential in the quality of life for lone mother families that are housed in social housing than those that are in market housing. The paper will conclude with a discussion of policy implications of these findings including the need for a continuum of housing choices.

Dunn, J. (2000) “Housing and Health Inequalities: Review and Prospects for Research,” Housing Studies 15(3):341–366.

13-06 Impact of enviromental interventions and community participation in the control of dengue in the neighbourhood of Belo Horizonte City

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Background: The first epidemic of dengue in Belo Horizonte (BH) was in 1996. From 1996 to 2008, BH had yearly epidemics that totaled nearly 100,000 cases (that involved Dengue 1, 2, and 3). In 2007, the administrative region of Northwest
had the largest number of dengue cases (2,150), compared to an average of 300 case for all city. In Ermelinda Neighborhood (30,000 inhabitants), a social-vulnerable area located in the Northwest Region of the City, a dengue outbreak occurred in February 2007. We evaluated the impact of the interventions to control this outbreak.

Methods: We compared dengue incidence in Ermelinda Neighborhood, before and after the intervention, and for the years 2007 and 2008. The intervention was initiated in March. It involved community participation, educational campaigns, and intensive collection of garbage, surveillance for vector and cases, and households spraying in radius of nine census blocks from any confirmed case or cluster of suspected cases, through outbreak response teams.

Results: In 2007, in the Ermelinda Neighborhood all 711 cases occurred between February and June. Of those, 70.32% occurred until April 15, and 28.57% in the following period after the interventions begun. The 2007 incidence rate was 2370.0/100,000 as compared to 393.3/100,000 inhabitants for the same period of 2008. The mean Dengue incidence rate in BH was 211.4 and 265.3/100,000 for 2007 and 2008, respectively.

Implications: The Ermelinda Neighborhood may be considered a highly vulnerable urban sector for dengue. The deteriorated environmental conditions, high population density and social-economical disadvantages, increases the risk of exposure of dengue virus infection. Control measures, incorporating community participation, educational campaigns, intensive collection of garbage, surveillance for vector and cases, households spraying and the integrality of the interventions are essential for surveillance purposes and to respond quickly to dengue outbreaks.

13-07 Inequalities in maternity care and newborn mortality among slum residents in Mumbai: A prospective study

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Background: Aggregated urban health statistics often mask inequalities. We described maternity care in vulnerable slum communities in Mumbai, and examined differences in care and outcomes between deprived and less deprived groups.

Methods: We set up a birth surveillance system in 48 vulnerable slum localities, covering a population of over 250,000. Resident women identified births in their own localities, and mothers and families were interviewed at 6 weeks after delivery. We analysed data on 5687 births occurring over a year. Socioeconomic status was classified using quartiles of standardized asset scores.

Findings: Compared to the poorest slum residents, the least poor quartile were less likely to have married (OR 0.35, 95% CI 0.27–0.45) and conceived (0.46, 0.39–0.54) in their teens, to use public sector facilities for antenatal (0.35, 0.28–0.44), delivery (0.27, 0.19–0.39), or postnatal care (2.34, 1.69–3.24), and to have a low
birthweight infant (0.70, 0.57–0.86). They were more likely to begin antenatal care before the third trimester of pregnancy (2.05, 1.41–2.96), make 3 or more visits (5.46, 3.69–8.09), and have institutional delivery (7.27, 5.08–10.38). A low female-to-male sex ratio was seen across all socio-economic groups (882 per 1000). There was a socioeconomic gradient for neonatal mortality, from 25.2 per 1000 in the poorest to 16.5 per 1000 in the least poor.

**Conclusion:** We found health inequalities within a population limited to poor slum residents. The fact that the poorest are much more dependent upon public sector health care suggests that quality improvement in municipal facilities is a pro-poor intervention.

**13-08 Labour force participation is associated with health outcomes in the OHTN cohort study**

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**Background:** The impact of (un)employment on health is well documented in the general population, but we know little about the health effects of labour-force participation in HIV/AIDS. The objective of this study is to evaluate the relationship between employment status and health-related quality of life (HRQOL).

**Methods:** A total of 290 PHAs provided baseline data in the context of the OHTN Cohort Study (OCS), an ongoing observational study examining the clinical and sociobehavioural determinants of health in HIV/AIDS. We collected data on demographic status (age, gender, citizenship, ethnicity, education, sexual orientation, employment status), HIV disease markers (time since diagnosis, HIV-related stigma), psychosocial resources (social support, mastery) and HRQOL (SF-36). We performed regression analyses to evaluate the contribution of employment status to HRQOL, including eight domains and two summary scores of the SF-36 (PCS: Physical Component Summary; MCS: Mental Component Summary). All models controlled for potential confounders.

**Results:** In univariate analyses, employment status was significantly associated with both summary scores and seven out of the eight domain scores. In the final models, employment status remained significant for both summary scores after controlling for potential confounders [PCS (α=5.90, 95%CI 3.92 to 7.88) and MCS (α=3.09, 95%CI 0.56 to 5.59)]. Employment status was also associated with six out of the eight HRQOL domains with significant regression coefficients, including physical function, role-physical, bodily pain, vitality, social function and role-emotional. In all regression models, employment was associated with better health.

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

13-09 Perceptions of neighborhood social disorder and HIV risk in New York City
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Background: Recent studies have examined the relation between neighborhood characteristics and HIV risk, most of which have focused exclusively on injection drug users (IDUs). We examined the relation between perceptions of neighborhood social disorder (e.g., problems, safety from crime and violence), HIV prevalence and risk behaviors.

Methods: A systematic random street sample of 941 non-drug users, former drug users, non-injection drug users and IDUs aged ≥18 years were recruited from 36 target neighborhoods. Perceptions of neighborhood social disorder and risk behaviors were assessed through an interviewer-administered questionnaire; serologic testing for HIV was conducted.

Results: The sample was 33.4% women, 42.4% Hispanic, 45.6% Black and 12.1% White/Other; 10.3% identified as gay, lesbian or bisexual. In bivariate analyses we observed significant associations between perceptions of neighborhood problems (and HIV prevalence, recent injection, >1 sex partner in last 6 months, sex with an IDU), safety from crime (and HIV prevalence, recent injection, sex with an IDU) and violence (and HIV prevalence, recent crack use, >1 sex partner in last 6 months), such that more social disorder was associated with risk behaviors and HIV prevalence. In multivariate logistic regression, perceived neighborhood violence was associated with >1 sex partner in last 6 months after controlling for age, race, gender, sexual identity, and socioeconomic status.

Conclusions: Our preliminary data suggest that perceived social disorder is associated with multiple sex partners, after controlling for individual demographic and socioeconomic characteristics; which is consistent with previous research reporting associations between STDs, HIV, drug use behaviors and neighborhood characteristics.

13-10 Relationship between residential status and HIV risk behaviours among Montréal street youth (SY)
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Background: There is some evidence that residential instability can favour high risk behaviours. Our objective was to examine the relationship between residential status and HIV risk behaviours among SY.
Methods: From 04/2006 to 05/2007, 419 SY 18–25 years old were recruited in a cohort study. SY were eligible if they had been homeless (minimum 24 hours) within the last 30 days. Follow-up interviews, carried out every 3 months, included completion of a questionnaire assessing daily sleeping arrangements since the last interview, and sexual and drug use behaviours for each month during the same period. Using mixed effects logistic regression analysis, we examined the association between five HIV risk behaviours and residential stability (reached if the youth lived during the whole month in:

1) his own place;
2) his friends'/partner’s place;
3) his parents’ home or
4) various types of housing service, excluding emergency shelter).

Results: As of 03/2008, 363 SY (80% boys) had cumulated 4228 complete months of follow-up. Controlling for age and sex, residential stability was significantly associated with: prostitution (adjusted odds ratio (AOR): 0.27; 95% confidence interval (CI): 0.14–0.39), drug injection (AOR: 0.62; CI: 0.36–0.88), daily alcohol consumption (AOR: 0.64; CI: 0.45–0.83) and polydrug use (AOR: 0.66; CI: 0.53–0.80). Although drug consumption α3 times/week was less frequently reported during stable months, this association was not statistically significant.

Conclusion: Although we cannot conclude that there is a causal relationship, this analysis shows that SY are less likely to have HIV risk behaviours when they reach residential stability.

13-11 Results of a challenging outbreak investigation in British Columbia, Canada: Shigella sonnei in Vancouver’s Downtown Eastside
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Background: Between October 2007 and April 2008 an outbreak of Shigella sonnei occurred in Vancouver’s Downtown Eastside (DTES), a socially disadvantaged population of approximately 20,000 people, with significant communicable disease burden, mental health and drug addiction issues. An investigation was undertaken to describe the case epidemiology and to determine risk factors for acquisition in order to institute appropriate control measures.

Methods: Cases were defined by laboratory confirmation of S. sonnei during the outbreak period in DTES residents or individuals with epidemiological links to DTES. Case follow-up, by phone or in person, elicited demographic, medical and risk factor information including contact with symptomatic individuals, residence in single room occupancy hotels or homeless shelters, or use of charitable food premises.

Results: Eighty-eight cases were identified, 90% were DTES residents and 10% had DTES epidemiological links. Overall, 72% of cases were male, and the median age
was 43 years. One-third of cases were hospitalized, there were no deaths and 18% and 42% respectively were known HIV and Hepatitis C infected. Thirty-five percent of cases had no fixed address and only 32% were located for follow-up. Food premise and contact recollection was poor, and no more than three cases were linked to any given DTES residence or food premise.

**Conclusion:** Although descriptive epidemiology of cases was possible, difficulties in locating cases and obtaining accurate histories meant that a conventional outbreak investigation was not feasible. Despite mobilization of environmental health staff for case follow-up and implementation of public health messaging, poor hygiene conditions and underlying social and medical factors were barriers to effective investigation and control.

### 13-12 Self-rated heath and neighbourhood physical and social characteristics

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**Background:** Several studies have reported that self-rated health (SRH), a multi-dimension indicator of health, is also a predictor of morbidity and mortality. The physic and social characteristics of the neighborhood of residence have also been associated with SRH. In this study we evaluated the association between SRH and one’s perception of the social and physical characteristics of the neighborhood.

**Methods:** A cross-sectional study was conducted in a representative population sample of Belo Horizonte Metropolitan Area, in 2003. The study population was composed of 13,489 individuals aged > 20 years. Participants reported SRH while answering a asking a 5 option question. Participants were asked to think of their neighborhood and answer 8 questions. They were classified as satisfied (5 or more positive answers) and not satisfied (4 or less positive answers. Multinomial logistic regression analyses was carried out, including variables with a p-value=0.2 in the bi-variated analyses.

**Results:** Of the 13,489 participants, 75.8%, 19.8% and 4.38% reported that his/her health was Very Good/good, Reasonable and Bad/Very bad, respectively. As compared to participants reporting SRH as Very good/Good, those reporting SRH as reasonable were more likely to be not satisfied with the neighborhood (OR: 1.43; IC95% 1.23–1.65). For those reporting SRH as Bad/Very Bad, the OR was 1.85 (1.42–2.40). The magnitude of these associations persisted after adjusting for potential confounders, like age, sex, marital status, education, employment, health plan, income, smoking, use of alcohol, family size and self referred medical diagnosis.

**Conclusion:** In our study, self-rated health was associated with a worse perception of the physical and social characteristics of the neighborhood of residence. Were we live incorporate several dimensions (e.g., historical, cultural, social interactions), that may be latent in individual SRH.
13-13 Silicosis in the city: A case study in Quito, Ecuador

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**Background:** While in occupational areas, Silicosis is well known, in environmental settings as cities, there is little evidence due. Therefore, environmental health impacts of silica dust are not well known.

**Methods:** A cross-sectional study was conducted in two neighbourhoods close to two quarries. One neighbourhood is located near a quarry that is also now operating, from more than 20 years ago and another neighbourhood located where the quarry was closed five years ago after more than thirty years of exploitation. Air samples were collected in both neighbourhoods. To look for health impacts two groups of subjects were recruited in the mining areas, while other group was organized as Reference Group. Only Individuals with more than 20 years living in the neighbourhoods were included in the study. A questionnaire was applied and spirometries and chest X-Rays were performed in each subject. Individuals that have worked in mining activities were excluded.

**Results:** Air monitoring showed in both neighbourhoods the presence of high levels of dust regarding WHO Particulate Matter guidelines. In the neighbourhood with the quarry still operating 18 out of 74 women and 11 out of 34 men showed respiratory disorders and in the closed quarry 8 out of 25 women and 8 out of 13 men presented similar impacts. Those disorders were tuberculosis, silicosis and tuberculosis, fibrosis and pneumoconiosis. In the reference group only 1 woman out of 36 subjects presented slight respiratory problems.

**Conclusions:** This study demonstrates that a long term environmental exposure to silica dust impact health in this areas. In developing countries cities are not always well planned and mining areas could be a part of the urban areas. A combination of social and environmental problems could lead to serious health problems.

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13-14 Structural dynamics of gender-based violence against women in street-based sex work

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**Background:** Despite increasing calls to adopt strategies to stop gender-based violence as part of global HIV prevention efforts, the contextual factors driving both gender-based violence and HIV transmission risk among sex workers have been largely absent from public health policy and practice. This study was...
conducted to determine longitudinally individual and contextual factors associated with violence against sex workers.

**Methods:** Given conceptual differences in rape, physical violence, and client-perpetrated violence, we constructed three separate multivariate GEE logistic regression models to examine associations with violence against women. Analyses include 237 female street-based sex workers who completed baseline and follow-up visits in a community-based prospective cohort.

**Results:** Over an 18-month follow-up period, 49% experienced physical violence, 30% experienced client-perpetrated violence and 25% had been raped. In multivariate GEE logistic regression modelling, physical violence was associated with being pressured into unprotected sex (aOR=2.23, 95%CI:1.40–3.61), homelessness (aOR=2.14, 95%CI:1.34–3.43), difficulty accessing drug treatment (aOR=1.96, 95%CI:1.03–3.72), and confiscation of drug use paraphernalia by police (without arrest)(aOR=1.50, 95%CI:1.02–2.41); client-perpetrated violence was associated with difficulty access drug treatment (aOR=2.13, 95%CI:1.26–3.62), being pressured into unprotected sex by a client (aOR=1.85, 95%CI:1.10–3.10), moving working areas due to police presence (aOR=2.13, 95%CI:1.26–3.62), and servicing clients in public spaces (aOR=1.50, 95%CI:1.08–2.57); and rape was associated with prior assault by police (aOR=2.61, 95%CI:1.32–5.16), consensual unprotected sex with a regular partner (aOR=1.82, 95%CI:1.01–3.25), homelessness (aOR=1.73, 95%CI:1.09–3.12), and having a regular partner score drugs for you (aOR=1.63, 95%CI:1.03–2.82).

**Conclusions:** Despite extensive media coverage and over $116 million spent on a recent police investigation and serial murder trials for the deaths of 26 sex workers, the alarming prevalence of sexual and physical violence that persist among women selling sex on the streets both locally and internationally is major failure of public health policy. Of particular concern, structural inequities of homelessness, criminalization, and access to drug treatment are key factors driving gender-based violence and HIV infection risk.

**13-15 The research alliance for Canadian homelessness, housing and health (REACH3)**

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**Issues:** Expanded research capacity in the area of homelessness, housing, and health is needed.
Description: The Research Alliance for Canadian Homelessness, Housing, and Health (REACH3) is a CIHR-funded team of academic investigators and leaders from community-based organizations in Vancouver, Calgary, Toronto, Ottawa, and Montreal. A central feature of REACH3 is community-academic collaboration to understand each other’s priorities, develop research projects based on shared interests, and engage in effective knowledge translation. Strengths include geographic diversity, interdisciplinary expertise, and front-line experience and credibility of community-based members. Processes to promote openness and equity in decision-making and resource allocation are emphasized. Since its inception in 2003, REACH3 has developed

(1) a CIHR-funded study examining how changes in housing status affect the health of homeless and vulnerably housed adults in Vancouver, Toronto and Ottawa;
(2) a CIHR-funded study to examine the effects of moving into social housing on adult and child mental health in Toronto;
(3) a proposed observational study of health and residential stability among street youth in Calgary; and
(4) the Quality of Life for Homeless and Hard-to-House Individuals (QOLHHI) instrument.

The REACH3 team presented research findings and perspectives to stakeholders at the Ottawa Community Forum on Homelessness in Fall 2007.

Lessons learned and next steps: REACH3 has developed fruitful community-academic research collaborations over the last 5 years. Increasingly, the team is engaging in knowledge translation to support the development of programs and policies that improve the health of homeless and vulnerably housed people.

13-16 Urban health promotion in Curitiba, Brazil
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Issues: Curitiba, Brazil has been developing an urban governance strategy, placing emphasis on the organizing the urban space, valuing social responsibility and intersectoral action as tools for the development of a more just and democratic society. These tools have also been applied to the governance of urban health.

Description: Social participation has been the key strategy to empowerment, bringing about opportunities for citizenship education, access to information, participation in the entire cycle of social projects, from assessment to decision making, resulting in a co-responsible governance. The decentralized municipal public administration capitalizes on formal and informal partnerships, mostly through participatory communication channels with the people, for decision-making. The development of strategic intersectoral actions and projects are based on the understanding of city’s complexity, mobilizing institutions and communities for action. The composition of the health councils at the various levels of government is 50% users, 25% workers and 25% administrators, who are all in some way elected.

Lessons learned: The Curitiba’s Master Plan, created by a participatory planning process through public audiences, has successfully integrated sectoral policies on mobility and transportation, social housing, economic development, social develop-
ment, public safety, environmental management and sustainable development. Furthermore, Curitiba has 123 local health councils that provide the forum for the participatory planning and governance.

**Next steps:** These policies have an impact on the sense of belonging of the population and on promoting a critical posture to qualify public policies that tackle the community needs and impact their quality of life in our urban setting. Participatory planning and development of public policies must be supported and disseminated by compromised policy makers.