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## **Urban Health Literature Review**

November-December 2006

**Topic A: Built and Social Environment Effects**

**Topic B: Health and Social Disparities**

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### **Topic A: Neighborhood, Social, and Built Environment Effects**

1. Guite HF, Clark C, Ackrill G. The impact of the physical and urban environment on mental well-being. *Public Health* 2006 December;120(12):1117-26.

**OBJECTIVES:** To examine the strength of association between physical and social factors in the built environment and mental well-being, and to determine which factors are the most important. **STUDY DESIGN:** A postal survey based on a theoretical model of domains that might link the physical and urban environment with mental well-being was sent to 2696 adults aged 18 years or over, in four areas of Greenwich, London. Mental health was measured using the SF36 subscales for mental health (MH) and vitality (V). Additional household and area level data were appended for each respondent from a range of sources. **RESULTS:** 1012 questionnaires were returned (38% response rate). At the univariate level significant confounders that were associated with poorer mental well-being were being female, 85+ years, unemployed or retired, on housing benefit, council tenant, two or more children, and having requested re-housing. Better mental well-being was associated with being aged 65 years to 84 years (better MH and V). Within domain analysis, adjusting for each of the confounding factors, resulted in the following factors being significantly associated with being in the lowest quartile for MH score: (i) control over the internal environment (damp), (ii) design and maintenance (not liking the look of the estate/road, (iii) noise (neighbour noise), (iv) density and escape (feeling over-crowded in the home, being dissatisfied with green spaces, dissatisfied with social and entertainment facilities) being dissatisfied with community facilities (such as libraries and community centres) was only significant for vitality, (v) fear of crime and harassment (feeling unsafe to go out in the day, feeling unsafe to go out at night, agreeing that needles and syringes left lying around are a problem) (vi) social participation (not enough events to get people together, not enough places to stop and chat). When these 12 factors were entered into a single model with the significant confounders five remained significantly associated with being in the lowest quartile for MH or V: neighbour noise

MH OR 2.71 [95% CI 1.48, 4.98]; feeling over-crowded in the home MH OR 2.22 [1.42, 3.48]; being dissatisfied with access to green open spaces MH OR 1.69 [1.05, 2.74]; access to community facilities V OR 1.92, [1.24, 3.00]; feeling unsafe to go out in the day MH OR 1.64 [1.02, 2.64]; V OR 1.58 [1.00, 2.49]. CONCLUSIONS: This study confirms an association between the physical environment and mental well-being across a range of domains. The most important factors that operate independently are neighbour noise, sense of over-crowding in the home and escape facilities such as green spaces and community facilities, and fear of crime. This study highlights the need to intervene on both design and social features of residential areas to promote mental well-being.

2. Coen SE, Ross NA. Exploring the material basis for health: characteristics of parks in Montreal neighborhoods with contrasting health outcomes. *Health Place* 2006 December;12(4):361-71.

The growing evidence of neighborhood influences on health points to the need for investigation of health-relevant features of local environments. This study examines one potentially health-enhancing neighborhood resource, urban parks, to test for systematic differences in material conditions between areas. Twenty-eight parks selected from six urban Montreal neighborhoods along a health status gradient are qualitatively assessed. While neighborhood parks showed a variety of feature quality ratings, those located in poor health areas displayed several pronounced material disadvantages, including concentration of physical incivilities, limited provision of facilities for physical exercise, and adjacency to industrial sites and multi-lane roads. Equalizing park quality between areas may be an important step for public health promotion.

3. Hillsdon M, Panter J, Foster C, Jones A. The relationship between access and quality of urban green space with population physical activity. *Public Health* 2006 December;120(12):1127-32.

OBJECTIVES: This study examined the association between access to quality urban green space and levels of physical activity. STUDY DESIGN: A cross-sectional examination of the relationship between access to quality urban green space and level of recreational physical activity in 4950 middle-aged (40-70 years) respondents from the European Prospective Investigation into Cancer and Nutrition (EPIC), who resided in Norwich, UK. METHODS: Using geographic information systems (GIS), three measures of access to open green space were calculated based on distance only, distance and size of green space and distance, size and quality of green space. Multiple regression models were used to determine the relationship between the three indicators of access to open green space and level of recreational physical activity. RESULTS: There was no evidence of clear relationships between recreational activity and access to green spaces. Non-significant associations were apparent for all variables, and there was no evidence of a clear trend in regression coefficients across quartiles of access for either the distance, size adjusted, and quality and size-adjusted models. Furthermore, the neighbourhood measures of access to green spaces showed non-significant associations with recreational physical activity. CONCLUSIONS: Access to urban green spaces does not appear to be

associated with population levels of recreational physical activity in our sample of middle-aged adults.

4. Ewing R, Brownson RC, Berrigan D. Relationship between urban sprawl and weight of United States youth. *Am J Prev Med* 2006 December;31(6):464-74.

**BACKGROUND:** Among United States youth there is an obesity epidemic with potential life-long health implications. To date, relationships between the built environment and body mass index (BMI) have not been evaluated for youth, and have not been evaluated longitudinally. **OBJECTIVES:** To determine if urban sprawl is associated with BMI for U.S. youth. **METHODS:** Using data from the 1997 National Longitudinal Survey of Youth (NLSY97), both cross-sectional and longitudinal analyses were conducted. Hierarchical modeling was used to relate characteristics of individuals, households, and places to BMI. Individual and household data were extracted from the NLSY97. The independent variable of interest was the county sprawl index, which was derived with principal components analyses from census and other data. **RESULTS:** In a cross-sectional analysis, the likelihood of U.S. adolescents (aged 12-17 years) being overweight or at risk of overweight ( $\geq 85$ th percentile relative to the Centers for Disease Control growth charts) was associated with county sprawl ( $p=0.022$ ). In another cross-sectional analysis, after controlling for sociodemographic and behavioral covariates, the likelihood of young adults (aged 18-23 years) being obese was also associated with county sprawl ( $p=0.048$ ). By contrast, in longitudinal analyses, BMI growth curves for individual youth over the 7 years of NLSY97, and BMI changes for individual youth who moved between counties, were not related to county sprawl (although coefficient signs were as expected). **CONCLUSIONS:** Cross-sectional analyses suggest that urban form is associated with being overweight among U.S. youth. The strength of these relationships proved comparable to those previously reported for adults. Longitudinal analyses show no such relationship. It is unclear why these approaches give different results, but sample sizes, latent effects, and confounders may contribute.

5. Glass TA, Rasmussen MD, Schwartz BS. Neighborhoods and obesity in older adults the Baltimore memory study. *Am J Prev Med* 2006 December;31(6):455-63.

**BACKGROUND:** Obesity has reached epidemic proportions. Although its causes are not well understood, its increasing prevalence is not likely to be due to genetic factors or underlying biology. This has led to interest in the role of environmental factors, although few studies have focused on the role of the social environment. This study investigated whether neighborhood psychosocial hazards independent of individual risk factors were associated with increased odds of obesity. **METHODS:** Baseline data were analyzed in 2005 from a cohort study of 1140 randomly selected community-dwelling men and women aged 50 to 70 years from 65 contiguous neighborhoods in Baltimore MD. Body mass index (BMI in kilograms/meters squared) was calculated from measured height and weight at baseline (2001-2002). People with a BMI of 30 and higher were considered obese. Multilevel logistic regression was used to examine associations between a 12-item scale of neighborhood psychosocial hazards and the odds of obesity. **RESULTS:** Thirty-eight percent of the cohort were obese. Residents of neighborhoods in the highest quartile of the Neighborhood Psychosocial Hazards scale were nearly twice as likely to be obese

compared to residents in the least-hazardous neighborhoods (53% vs 27%). After adjustment for age, gender, race/ethnicity, education, household wealth, alcohol consumption, tobacco use, self-reported physical activity, and dietary intake, living in more hazardous neighborhoods was associated with a graded increase in the odds of obesity. This association was partially mediated by physical activity. CONCLUSIONS: Even after controlling for a large set of demographic, behavioral, and socioeconomic individual-level risk factors, living in a neighborhood with greater psychosocial hazards was independently associated with obesity.

6. Lopez-Zetina J, Lee H, Friis R. The link between obesity and the built environment. Evidence from an ecological analysis of obesity and vehicle miles of travel in California. *Health Place* 2006 December; 12(4):656-64.

AIMS: Obesity and physical inactivity are known to be risk factors for many chronic diseases including hypertension, coronary artery disease, diabetes, and cancer. We sought to explore the association between an indicator of transportation data (Vehicle Miles of Travel, VMT) at the county level as it relates to obesity and physical inactivity in California. METHODS: Data from the California Health Interview Survey 2001 (CHIS 2001), the US 2000 Census, and the California Department of Transportation were merged to examine ecological correlations between vehicle miles of travel, population density, commute time, and county indicators of obesity and physical inactivity. Obesity was measured by body mass index (BMI). Physical inactivity was based on self-reported behaviors including walking, bicycling, and moderate to vigorous activity. The unit of analysis was the county. Thirty-three counties in California with population size greater than 100,000 persons per county were retained in the analyses. RESULTS: CHIS 2001 statewide obesity prevalence ranged from 11.2% to 28.5% by county. Physical inactivity ranged from 13.4% to 35.7%. Daily vehicle miles of travel ranged from 3.3 million to 183.8 million per county. By rank bivariate correlation, obesity and physical inactivity were significantly associated ( $p < 0.01$ ). Furthermore, by rank analysis of variance, the highest mean rank obesity was associated with the highest rank of VMT ( $p < 0.01$ ). Similar rank patterns were observed between obesity and physical inactivity and commute time. Associations between VMT and physical inactivity were examined but failed to reach statistical significance. CONCLUSION: This analysis adds to the growing evidence supporting the association between VMT (a measure of automobile transportation) and obesity. An urban design characterized by over dependence on motorized transportation may be related to adverse health effects.

7. Winters M, Friesen MC, Koehoorn M, Teschke K. Utilitarian Bicycling A Multilevel Analysis of Climate and Personal Influences. *Am J Prev Med* 2006 December; [Epub ahead of print].

BACKGROUND: Increasing utilitarian bicycling in urban areas is a means to reduce air and noise pollution, increase physical activity, and reduce the risk of chronic diseases. We investigated the impact of individual- and city-level characteristics on bicycling in Canadian cities to inform transportation and public health policies. METHODS: The study population included 59,899 respondents to the 2003 Canadian Community Health Survey (CCHS) living in cities with populations greater than 50,000. In 2005, data on

individual characteristics were drawn from the CCHS, and city-level climate data from Environment Canada records. Separate multilevel logistic regression models were developed for the general (nonstudent) and student populations. RESULTS: The proportion of the urban population reporting bicycling in a typical week was 7.9%, with students cycling more than nonstudents (17.2% vs 6.0%). In the general population, older age, female gender, lower education, and higher income were associated with lower likelihood of cycling. More days of precipitation per year and more days of freezing temperatures per year were both associated with lower levels of utilitarian cycling (odds ratios [ORs] for every 30-day increase in precipitation=0.84, 95% confidence interval [CI]=0.74-0.94, and for every 30-day increase in freezing temperatures OR=0.91, 95% CI=0.86-0.97). There was less variation in the proportion of students who cycled by age and income, and only the number of days with freezing temperatures influenced bicycling. CONCLUSIONS: Bicycling patterns are associated with individual demographic characteristics and the climate where one lives. This evidence might be useful to guide policy initiatives for targeted health promotion and transportation infrastructure.

8. Clifton KJ, Kreamer-Fults K. An examination of the environmental attributes associated with pedestrian-vehicular crashes near public schools. *Accid Anal Prev* 2006 December 14; [Epub ahead of print].

This paper examines pedestrian-vehicular crashes in the vicinity of public schools, the severity of injuries sustained, and their relationship to the physical and social attributes near the schools. Multivariate models of crash severity and crash risk exposure were estimated as a function of social and physical characteristics of the area immediately surrounding schools in Baltimore City, Maryland. Results show that the presence of a driveway or turning bay on the school entrance decreases both crash occurrence and injury severity. Conversely, the presence of recreational facilities on the school site is positively associated with crash occurrence and injury severity of crashes. Findings related to neighborhood characteristics were mixed but the significant variables - transit access, commercial access, and population density - are generally associated with increased pedestrian demand and should be interpreted with care. The results of this study are relevant for Safe Routes to School projects and point to areas meriting further study.

9. Zhu L, Gorman DM, Horel S. Hierarchical Bayesian spatial models for alcohol availability, drug "hot spots" and violent crime. *Int J Health Geogr* 2006 December 7;5:54.:54.

BACKGROUND: Ecologic studies have shown a relationship between alcohol outlet densities, illicit drug use and violence. The present study examined this relationship in the City of Houston, Texas, using a sample of 439 census tracts. Neighborhood sociostructural covariates, alcohol outlet density, drug crime density and violent crime data were collected for the year 2000, and analyzed using hierarchical Bayesian models. Model selection was accomplished by applying the Deviance Information Criterion. RESULTS: The counts of violent crime in each census tract were modelled as having a conditional Poisson distribution. Four neighbourhood explanatory variables were identified using principal component analysis. The best fitted model was selected as the

one considering both unstructured and spatial dependence random effects. The results showed that drug-law violation explained a greater amount of variance in violent crime rates than alcohol outlet densities. The relative risk for drug-law violation was 2.49 and that for alcohol outlet density was 1.16. Of the neighbourhood sociostructural covariates, males of age 15 to 24 showed an effect on violence, with a 16% decrease in relative risk for each increase the size of its standard deviation. Both unstructured heterogeneity random effect and spatial dependence need to be included in the model. CONCLUSION: The analysis presented suggests that activity around illicit drug markets is more strongly associated with violent crime than is alcohol outlet density. Unique among the ecological studies in this field, the present study not only shows the direction and magnitude of impact of neighbourhood sociostructural covariates as well as alcohol and illicit drug activities in a neighbourhood, it also reveals the importance of applying hierarchical Bayesian models in this research field as both spatial dependence and heterogeneity random effects need to be considered simultaneously.

10. Bell JF, Zimmerman FJ, Almgren GR, Mayer JD, Huebner CE. Birth outcomes among urban African-American women: a multilevel analysis of the role of racial residential segregation. *Soc Sci Med* 2006 December;63(12):3030-45.

Residential segregation is a common aspect of the urban experiences of African-Americans in the United States (US), yet few studies have considered how segregation might influence perinatal health. Here, we develop a conceptual model of relationships between segregation and birth outcomes and test the implications of the model in a sample of 434,376 singleton births to African-American women living in 225 US Metropolitan Statistical Areas (MSAs). Data from the National Center for Health Statistics 2002 birth files were linked to data from the 2000 US Census and two distinct measures of segregation: an index of isolation (the probability that an African-American resident will encounter another African-American resident in any random neighborhood encounter) and an index of clustering (the extent to which African-Americans live in contiguous neighborhoods). Using multilevel regression models, controlling for individual- and MSA-level socioeconomic status and other covariates, we found higher isolation was associated with lower birthweight, higher rates of prematurity and higher rates of fetal growth restriction. In contrast, higher clustering was associated with more optimal outcomes. We propose that isolation reflects factors associated with segregation that are deleterious to health including poor neighborhood quality, persistent discrimination and the intra-group diffusion of harmful health behaviors. Associations with clustering may reflect factors associated with segregation that are health-promoting such as African-American political power empowerment, social support and cohesion. Declines in isolation could represent positive steps toward improving birth outcomes among African-American infants while aspects of racial contiguity appear to be mitigating or indeed beneficial. Segregation is a complex multidimensional construct with both deleterious and protective influences on birth outcomes, depending on the dimensions under consideration. Further research to understand racial/ethnic and economic health disparities could benefit from a focus on the contributory role of neighborhood attributes associated with the dimensions segregation and other social geographies.

## Topic B: Environmental Health

11. Clark HF, Brabander DJ, Erdil RM. Sources, sinks, and exposure pathways of lead in urban garden soil. *J Environ Qual* 2006 October 27;35(6):2066-74.

The chemistry of Pb in urban soil must be understood in order to limit human exposure to Pb in soil and produce and to implement remediation schemes. In inner-city gardens where Pb contamination is prevalent and financial resources are limited, it is critical to identify the variables that control Pb bioavailability. Field-portable X-ray fluorescence was used to measure Pb in 103 urban gardens in Roxbury and Dorchester, MA, and 88% were found to contain Pb above the USEPA reportable limit of 400  $\mu\text{g g}^{-1}$ . Phosphorus, iron, loss on ignition, and pH data were collected, Pb-bearing phases were identified by X-ray diffraction, and Pb isotopes were measured using inductively coupled plasma mass spectrometry. Four test crops were grown both in situ and in Roxbury soil in a greenhouse, and plant tissue was analyzed for Pb uptake by polarized energy-dispersive X-ray fluorescence. Variation at the neighborhood scale in soil mineralogical and chemical characteristics suggests that the bioavailable fraction of Pb in gardens is site specific. Based on Pb isotope analysis, two historical Pb sources appear to dominate the inventory of Pb in Roxbury gardens: leaded gasoline ( $(^{207}\text{Pb}/^{206}\text{Pb}) = 0.827$ ) and Pb-based paint ( $(^{207}\text{Pb}/^{206}\text{Pb}) = 0.867$ ). Nearly 70% of the samples analyzed can be isotopically described by mixing these two end members, with Pb-based paint contributing 40 to 80% of the mass balance. A simplified urban human exposure model suggests that the consumption of produce from urban gardens is equivalent to approximately 10 to 25% of children's daily exposure from tap water. Furthermore, analysis of over 60 samples of plant tissue from the four test species suggests that in these urban gardens unamended phytoremediation is an inadequate tool for decreasing soil Pb.

12. de Freitas CU, De Capitani EM, Gouveia N et al. Lead exposure in an urban community: Investigation of risk factors and assessment of the impact of lead abatement measures. *Environ Res* 2006 November 3; [Epub ahead of print].

**INTRODUCTION:** A battery recycling plant located in an urbanized area contaminated the environment with lead oxides. The Secretary of Environment of the State of Sao Paulo demanded an evaluation of lead exposure among the population in the vicinity of the plant. **OBJECTIVES:** To assess the lead exposure of children, to propose control measures and evaluate the impact of these measures. **METHODS:** Cross-sectional study of all children <13 years old in a radius of 1km from the plant responsible for the contamination. Blood lead levels (BLL) were determined for each child and questionnaires were applied to their parents. Mean BLL were compared before and after control measures were implemented. Logistic regression identified risk factors of lead exposure. **RESULTS:** Of the 850 investigated children, 311 presented BLL above the action limit established by the World Health Organization. Overall, the median BLL was 7.3  $\mu\text{g/dL}$  and it varied according to age of children (higher among 1-5 years old) and distance of the residence from the plant. Risk factors identified for  $\text{BLL} > 10 \mu\text{g/dL}$  were: to live in unpaved areas, parent working in the plant, distance from the plant, to play on the ground, pica, and to drink locally produced milk. After control measures were implemented (closing the plant, soil removal, dust vacuum-cleaning in the households,

etc.), a reduction of 46% in BLL was observed considering the 241 re-evaluated children with levels >10µg/dL. CONCLUSIONS: This study showed that combined abatement measures were effective in reducing BLL in children living close to a contaminating source. These results informed the decision-making process regarding management of contaminated areas in Brazil.

13. Nerriere E, Guegan H, Bordigoni B et al. Spatial heterogeneity of personal exposure to airborne metals in French urban areas. *Sci Total Environ* 2006 December 12; [Epub ahead of print].

The spatial distribution of urban population exposures to ambient air particles was investigated as part of the Genotox'ER study conducted in four metropolitan areas (Grenoble, Paris, Rouen and Strasbourg) in France. In each city, 60 to 90 non-smoking adult and children volunteers were selected. Subjects lived in three different urban sectors: one highly exposed to traffic emissions, one influenced by local industrial sources, and a background urban environment. The Harvard Chempass multi-pollutant personal sampler was used to sample PM10 and PM2.5 particles during 48 h during two different seasons ('hot' and 'cold'). The elemental composition of the filters was analysed by Particle-Induced X-ray Emission (PIXE). Sixteen elements were found to be over the method detection limits: Al, Si, P, S, Cl, K, Ca, Ti, V, Cr, Mn, Fe, Ni, Cu, Zn and Pb. The relative concentrations of elements of crustal origin (Si, Al, Ca) were higher in the coarse fraction of PM10 filters, while elements associated with combustion processes (traffic emissions or industrial combustion) presented higher relative concentrations in the PM2.5 fraction (S, Ni, V, Pb). Spatial heterogeneity of elemental exposures by urban sector is substantial for some metals of health concern, with 20% to 90% greater exposure values, on average, in the traffic proximity or industrial sectors, compared to the background sector, for Fe, Zn, Cu, V and Cr. This spatial heterogeneity should not be overlooked in epidemiological or risk assessment studies.

14. Ruchirawat M, Settachan D, Navasumrit P, Tuntawiroon J, Autrup H. Assessment of potential cancer risk in children exposed to urban air pollution in Bangkok, Thailand. *Toxicol Lett* 2006 November 16; [Epub ahead of print].

Urban air pollution resulting from traffic is a major problem in many cities in Asia, including Bangkok, Thailand. This pollution originates mainly from incomplete fossil fuel combustion, e.g. transportation, and the composition of which is very complex. Some of the compounds are carcinogenic in experimental animals and in man. Polycyclic aromatic hydrocarbons (PAHs) and benzene are among the major carcinogenic compounds found in urban air pollution from motor vehicle emissions. In major cities in Asia, the levels of PAHs and benzene are relatively high compared with those in Europe or in the United States and thus people are exposed to higher levels. Biomarkers of exposure and early biological effects have been used to study the potential health effects of exposure to PAHs and benzene in air pollution in school children attending schools in inner-city Bangkok compared to those attending schools in rural areas. Bangkok school children are exposed to total PAHs at levels 3.5-fold higher than those in the rural area. Urinary 1-hydroxypyrene, a metabolite of PAH, was also significantly higher, while PAH-DNA adducts in lymphocytes were five-fold higher in Bangkok school children

than rural school children. Benzene exposure in Bangkok school children was approximately two-fold higher than in rural school children. This is in agreement with the levels of biomarkers of internal benzene dose, i.e. blood benzene and urinary t,t-muconic acid. The potential health risks from exposure to genotoxic substances were assessed through DNA-damage levels and DNA repair capacity. DNA strand breaks were significantly higher, whereas DNA repair capacity was significantly reduced in Bangkok children. Genetic polymorphisms have been detected in glutathione-S-transferases (GSTs) and cytochrome P450 (CYP450) enzymes involved in the metabolism of benzene and PAHs, but these polymorphisms had no significant effects on the biomarkers of PAH exposure. Our results indicate that children living in a mega city such as Bangkok may have an increased health risk of the development of certain diseases due to exposure to genotoxic substances in air pollution compared to children living in suburban/rural areas.

### **Topic C: Health and Social Disparities**

15. Chen JT, Rehkopf DH, Waterman PD et al. Mapping and Measuring Social Disparities in Premature Mortality: The Impact of Census Tract Poverty within and across Boston Neighborhoods, 1999-2001. *J Urban Health* 2006 November;83(6):1063-84.

The identification and documentation of health disparities are important functions of public health surveillance. These disparities, typically falling along lines defined by gender, race/ethnicity, and social class, are often made visible in urban settings as geographic disparities in health between neighborhoods. Recognizing that premature mortality is a powerful indicator of disparities in both health status and access to health care that can readily be monitored using routinely available public health surveillance data, we undertook a systematic analysis of spatial variation in premature mortality in Boston (1999-2001) across neighborhoods and sub-neighborhoods in relation to census tract (CT) poverty. Using a multilevel model based framework, we estimated that the incidence of premature mortality was 1.39 times higher (95% credible interval 1.09-1.78) among persons living in the most economically deprived CTs ( $\geq 20\%$  below poverty) compared to those in the least impoverished tracts ( $< 5\%$  below poverty). We present maps of model-based standardized mortality ratios that show substantial within-neighborhood variation in premature mortality and a sizeable decrease in spatial variation after adjustment for CT poverty. Additionally, we present maps of model-based direct standardized rates that can more readily be compared to externally published rates and targets, as well as maps of the population attributable fraction that show that in some of Boston's poorest neighborhoods, the proportion of excess deaths associated with CT poverty reaches 25-30%. We recommend that these methods be incorporated into routine analyses of public health surveillance data to highlight continuing social disparities in premature mortality.

16. Lemstra M, Neudorf C, Opondo J. Health disparity by neighbourhood income. *Can J Public Health* 2006 November;97(6):435-9.

BACKGROUND: Canadian cities are becoming more segregated by income. As such, investigation is required into the magnitude of health disparity between low-, average-

and high-income neighbourhoods in order to quantify the level of health disparity at the scale of an urban city. METHODS: A cross-sectional ecological study design was used to review all hospital discharges, physician visits, medication utilization, public health information and vital statistics for an entire city by neighbourhood income status. Postal code information was used to identify six existing contiguous residential neighbourhoods in the city of Saskatoon that were defined as low-income cut-off neighbourhoods (N=18,228). There were two comparison groups: all other Saskatoon residents (N=184,284) and the five most affluent neighbourhoods in Saskatoon (N=16,683). FINDINGS: Statistically significant differences in health care utilization by neighbourhood income status were observed for suicide attempts, mental disorders, injuries and poisonings, diabetes, chronic obstructive pulmonary disease, coronary heart disease, chlamydia, gonorrhoea, hepatitis C, teen birth, low birthweight, infant mortality and all-cause mortality. The rate ratios increased in size when comparing low-income neighbourhoods to high-income neighbourhoods. No clear trend was observed for stroke or cancer.

17. van HC, Droomers M, van Loon JA, van der LF, Kunst AE. Exceptions to the rule: Healthy deprived areas and unhealthy wealthy areas. *Soc Sci Med* 2006 December; [Epub ahead of print].

In general, inhabitants of low socio-economic areas are unhealthier than inhabitants of high socio-economic areas, but some areas are an exception to this rule. These exceptions imply that other factors besides the socio-economic level of an area contribute to the health of the inhabitants of an area, e.g. environmental factors. In our study we concentrate on areas within the Netherlands that are healthier or unhealthier than could be expected based on their socio-economic level. This study first identifies these areas and secondly determines which area characteristics distinguish these areas from those areas where the level of health is in agreement with their socio-economic level. We used nation-wide data on neighbourhood differences in population composition (gender, age, marital status and ethnicity), urbanisation and two health indicators: mortality and hospitalisation rates. In the Netherlands, many areas are healthier or unhealthier than could be expected based on their income level alone. Areas with higher mortality rates than expected are mainly urban areas with high percentages of elderly people and persons living alone. Similar but opposite associations are observed for areas with lower mortality rates than expected, which are further characterised by a low percentage of non-western immigrants. Areas with lower hospitalisation rates than expected are mainly rural areas with few non-western immigrants. From these results, we conclude that urbanisation and residential segregation based on age, ethnicity and marital status might be important contributors to geographical health inequalities.

18. Galea S, Ahern J, Tracy M, Rudenstine S, Vlahov D. Education inequality and use of cigarettes, alcohol, and marijuana. *Drug Alcohol Depend* 2006 November 25; [Epub ahead of print].

Education inequality at the neighborhood-level may influence population health and health behavior. We assessed the relations between education inequality and substance use in 59 New York City (NYC) neighborhoods. We used Gini coefficients of education to describe neighborhood education inequality and data from a random-digit-dial phone

survey of adult residents of NYC to assess use of substances. Among 1355 respondents (female=56.2%; white=35.7%; mean age=40.4), 23.9% (95% confidence interval [CI]=20.3-27.5) reported smoking, 39.4% (95% CI=35.3-43.4) drinking, and 5.4% (95% CI=3.6-7.3) using marijuana in the previous 30 days. In multilevel models controlling for neighborhood education, neighborhood income inequality, and individual covariates, living in a neighborhood with high education inequality was associated with a greater prevalence of drinking (p=0.02) and of smoking marijuana (p=0.004) but among current drinkers it was associated (p=0.03) with having fewer drinks. The odds of alcohol use (OR=1.70) and marijuana use (OR=3.49) were greater in neighborhoods in the 75th percentile of education Gini compared to neighborhoods in the 25th percentile of education Gini. Statistical interactions suggest that there may be a stronger relation between education inequality and marijuana use in neighborhoods with low mean education than in neighborhoods with higher mean levels of education. These findings, taken together, suggest a complex relation between education inequality and substance use; likelihood of the use of alcohol and marijuana was higher in areas with higher education inequality suggesting potential roles for substance use norms and availability, whereas quantity used among drinkers was higher in areas with low education inequality, suggesting potential roles for both disadvantage and norms.

19. Appel A, Everhart R, Mehler PS, MacKenzie TD. Lack of ethnic disparities in adult immunization rates among underserved older patients in an urban public health system. *Med Care* 2006 November;44(11):1054-8.

**BACKGROUND:** In some settings, immunization rates for ethnic minorities are less than those of non-Hispanic white populations. This study examines demographic differences in the rate of pneumococcal and influenza immunization in an ethnically diverse older patient population seeking care at an urban primary care clinic system. **METHODS:** The setting is an integrated system of 11 federally qualified community health centers serving approximately 100,000 unduplicated patients annually. We linked data from chart audits performed in 2001-2003 for quality assurance purposes with patient registration data to evaluate vaccination rates in 740 patients age 66 years and older who had at least 3 primary care visits in the previous 2 years. **RESULTS:** Factors significantly associated with receipt of pneumococcal vaccination in multivariable analysis were Hispanic ethnicity (odds ratio [OR] 1.66-1.77, P = 0.01), medical comorbidities (OR 1.48, P = 0.03), psychiatric comorbidities (OR 2.0, P = 0.001), use of a family medicine versus internal medicine clinic (OR 2.3, P < 0.001), and age (OR 1.04 for 1 year increase, P = 0.004). Factors significantly associated with influenza vaccination were having insurance (OR 2.25, P = 0.014), medical comorbidities (OR 1.71, P = 0.036), age (OR 1.03 for 1 year increase, P = 0.045), later year of audit (OR 1.68-1.73, P = 0.015), and a greater number of clinic visits (OR 1.69, P = 0.006). **CONCLUSIONS:** Among older regular users of our public community health centers, minority populations have equal or higher immunization rates compared with non-Hispanic whites.

#### **Topic D: Prisons**

20. Jones GY, Hoffmann NG. Alcohol dependence: international policy implications for prison populations. *Subst Abuse Treat Prev Policy* 2006 November 8;1:33.:33.

**BACKGROUND:** In light of the emphasis on drug abuse, this study explored the relative prevalence of substance use disorders among United Kingdom (UK) prison inmates in the context of findings from a general inmate population in the United States (US). The lead author of the report conducted a structured diagnostic interview with 155 new admissions to one of two prisons in the UK using the CAAPE (Comprehensive Addiction And Psychological Evaluation), a structured diagnostic interview, to ensure consistent assessments. The US sample consisted of 6,881 male inmates in a state prison system evaluated with an automated version of the SUDDS-IV (Substance Use Disorder Diagnostic Schedule-IV) interview. **RESULTS:** Alcohol dependence emerged as the most prevalent substance use disorder in both UK prisons and in the US sample. Relative frequencies of abuse and dependence for alcohol and other drugs revealed that dependence on a given substance was more prevalent than abuse as defined by the current diagnostic criteria. **CONCLUSION:** Despite the emphasis on drugs in correctional populations, alcohol dependence appears to be the most prominent substance use disorder among the incarcerated in both the US and UK and must be considered in developing treatment programs and policy priorities.

21. Struckman-Johnson C, Struckman-Johnson D. A comparison of sexual coercion experiences reported by men and women in prison. *J Interpers Violence* 2006 December;21(12):1591-615.

Comparisons were made between self-reports from 382 men and 51 women who had experienced sexual coercion while incarcerated. Victim data were obtained from a sample of 1,788 male inmates and 263 female inmates who responded to an anonymous written survey distributed in 10 midwestern prisons. Men reported that their perpetrators in worst-case incidents were inmates (72%), staff (8%), or inmates and staff collaborating (12%). Women reported that their perpetrators were inmates (47%) and staff (41%). Greater percentages of men (70%) than women (29%) reported that their incident resulted in oral, vaginal, or anal sex. More men (54%) than women (28%) reported an incident that was classified as rape. Men and women were similar in feeling depression; however, more men (37%) than women (11%) reported suicidal thoughts and suicide attempts (19% for men, 4% for women). Implications of results for prevention of sexual coercion in prison are discussed.

22. Yap L, Butler T, Richters J et al. Do condoms cause rape and mayhem? The long-term effects of condoms in New South Wales' prisons. *Sex Transm Infect* 2006 December; [Epub ahead of print].

**OBJECTIVE:** Concerns raised by opponents to condom provision in prisons have not been objectively examined and the issue continues to be debated. We examined the long-term effects of the introduction of condoms and dental dams into New South Wales (NSW) prisons in 1996, focusing on particular concerns raised by politicians, prison officers, prison nurses, and prisoners. These groups were worried that: (a) condoms would encourage prisoners to have sex, (b) condoms would lead to an increase in sexual assaults in prisons, (c) prisoners would use condoms to hide and store drugs and other contraband, and (d) prisoners would use condoms as weapons. **METHOD:** Data sources included the NSW Inmate Health Surveys in 1996 and 2001 and official reports from the

NSW Department of Corrective Services. The 1996 IHS involved 657 men and 132 women randomly selected from all prisons with a 90% response rate. The 2001 survey involved 747 men and 167 women inmates with an 85% response rate. RESULTS: There was a decrease in reports of both consensual male-to-male sex and male sexual assaults 5 years after the introduction of condoms into prisons in 1996. Condoms were often used for concealing contraband items and other purposes but this was not associated with an increase in drug injecting in prison. Only three incidents of a condom being used in assaults on prison officers were recorded between 1996 and 2005; none were serious. CONCLUSIONS: We found no evidence of serious adverse consequences of distributing condoms and dental dams to prisoners in NSW. Condoms are an important public health measure in the fight against HIV and sexually transmitted diseases; they should be made freely available to prisoners as they are to other high- risk groups in the community.

### **Topic E: Adolescents**

23. Cunningham R, Walton M, Trowbridge M et al. Correlates of violent behavior among adolescents presenting to an urban emergency department. *J Pediatr* 2006 December;149(6):770-6.

OBJECTIVE: To examine rates and correlates of self-reported perpetrated violence among teens presenting to an urban emergency department. STUDY DESIGN: Cross-sectional study of a consecutive sample of youth (12-17 years) presenting to an urban emergency department. The youth were surveyed about demographics, community violence exposure, parental monitoring, substance use, weapon carriage, group fighting, and aggression (past 12 months). Bivariate and multivariate analyses were performed to identify correlates of the severity of the violence (none, moderate, or severe) perpetrated in the past year. RESULTS: A total of 115 youth were surveyed (males, 47%; response rate, 85%). The sample group was 51% African American. A total of 77% of the youth reported that they perpetrated violence in the past year, with 37% reporting severe violence (use of a weapon, group fighting, causing an injury requiring medical care). All patients who self-reported perpetrating severe violence in the past year were discharged home from the emergency department. The diagnosis made in the emergency department (illness versus injury) was not associated with the violence perpetrated in the past year. Sex was not a significant predictor of severe perpetrated violence. CONCLUSIONS: Youth presenting to urban emergency departments report high rates of perpetrating violence in the past year that, on the basis of other studies, is likely to continue. These results suggest that future emergency department-based violence prevention efforts should consider universal screening of adolescents.

24. Doherty IA, Minnis A, Auerswald CL, Adimora AA, Padian NS. Concurrent Partnerships Among Adolescents in a Latino Community: The Mission District of San Francisco, California. *Sex Transm Dis* 2006 December 21; [Epub ahead of print].

OBJECTIVES:: Latino adolescents in the United States are disproportionately affected by sexually transmitted infections, yet knowledge of their sexual networks, particularly concurrent sex partners, is limited. GOAL:: The goal of this study was to describe the prevalence, patterns, and correlates of sexual concurrency among adolescents in an urban

neighborhood. **STUDY DESIGN::** The authors conducted cross-sectional analyses of 368 sexually active youth recruited from public venues within a predominantly Latino neighborhood in San Francisco, California. **RESULTS::** During the prior 6 months, 20% of sexually experienced youth had concurrent partnerships, but this was more likely among males (27%) as females (12%) (odds ratio = 2.6; 95% confidence interval = 1.5-4.5). Sexually transmitted infection prevalence was too low to examine its association with concurrency. Factors that increased the likelihood of concurrency among males included: immigrant generation and being below grade level; and among females: older age and use of illegal substances. **CONCLUSIONS::** Ample opportunities to transmit sexually transmitted infections through concurrency were present, yet very few adolescents were infected, perhaps owing to adequate condom use within a neighborhood with low sexually transmitted infection prevalence.

25. Meuwissen LE, Gorter AC, Segura Z, Kester AD, Knottnerus JA. Uncovering and responding to needs for sexual and reproductive health care among poor urban female adolescents in Nicaragua. *Trop Med Int Health* 2006 December;11(12):1858-67.

**BACKGROUND:** To meet the needs of female adolescents from low-income urban areas for sexual and reproductive health (SRH) care, vouchers providing free-of-charge access to SRH care at 19 primary care clinics were distributed in Managua, Nicaragua. These vouchers substantially increased the use of services, demonstrating that many adolescents are willing to use such services, if readily accessible. The voucher redemption made it possible to identify the nature of existing, but largely unmet, needs for SRH care. **METHOD:** The medical files from 3301 consultations with female adolescents were analysed using descriptive statistical methods and multiple logistic regression. **RESULTS:** Female adolescents presented SRH problems that merited medical attention. The mean number of problems presented was 1.5 per consultation: 34% of the vouchers were used for contraceptives, 31% for complaints related to sexually transmitted infection (STI) or reproductive tract infection (RTI), 28% for advice/counselling, 28% for antenatal check-up and 18% for pregnancy testing. A new category of health care users emerged: sexually active girls who were neither pregnant nor mothers and who sought contraceptives or STI/RTI treatment. Contraceptive use doubled among the sexually active non-pregnant voucher redeemers. Consultation with a female doctor younger than 36 years was associated with a higher chance of having contraceptives prescribed. **CONCLUSION:** Accessible and appropriate SRH care has the potential to make an important contribution to the increased contraceptive use, decreased risk of unwanted teenage pregnancies and decreased prevalence of STIs/RTIs among underserved adolescents. Once adolescents access the services, providers have a crucial role in ensuring current and continuing needs are met.

26. Schinke S, Di NJ, Schwinn T, Cole K. Drug abuse risk and protective factors among black urban adolescent girls: a group-randomized trial of computer-delivered mother-daughter intervention. *Psychol Addict Behav* 2006 December;20(4):496-500.

A group-randomized design tested a mother-daughter intervention in which researchers aimed to increase protective factors in a community sample of Black urban adolescent girls. Girls and their mothers at 2 community agencies were pretested and, by agency,

were randomized to either an intervention arm or a control arm. Intervention arm girls and their mothers received a program for improving mother- daughter rapport. Posttest data collected 3 weeks after program delivery revealed that intervention arm mothers and daughters improved more than did control arm mothers and daughters on measures of communication and closeness. At 3-month follow-up, intervention arm mothers, relative to control arm mothers, continued to report better communication with and closeness to their daughters. Girls and mothers in the intervention arm rated the computer program favorably on parameters of enjoyment, comfort, relevance, usefulness of information, improvements to their relationship with one another, and whether they would recommend the computer program to friends.

27. Hardy LL, Dobbins T, Booth ML, ney-Wilson E, Okely AD. Sedentary behaviours among Australian adolescents. *Aust N Z J Public Health* 2006 December;30(6):534-40.

**OBJECTIVE:** To describe the prevalence and distribution (by demographic characteristics and body mass index [BMI] category) of sedentary behaviour among Australian adolescents aged 11-15 years. **METHOD:** Cross-sectional representative population survey of school students (n = 2,750) in New South Wales, conducted in 2004. Students' self-reported time spent during a usual week in five categories of sedentary behaviour (small screen recreation [SSR], education, cultural, social and non-active travel). Height and weight were measured. **RESULTS:** Grade 6, 8 and 10 students spent approximately 34 hours, 41 hours and 45 hours/week of their discretionary time, respectively, engaged in sedentary behaviour. Urban students and students from Asian-speaking backgrounds spent significantly more time sedentary than students from rural areas or other cultural backgrounds. SSR accounted for 60% and 54% of sedentary behaviour among primary and high school students, respectively. Overweight and obese students spent more time in SSR than healthy weight students. Out-of-school hours educational activities accounted for approximately 20% of sedentary behaviour and increased with age. Girls spent twice the time in social activities compared with boys. Time spent in cultural activities declined with age. **CONCLUSION:** Sedentary behaviours among young people differ according to sex, age and cultural background. At least half of all time spent in sedentary behaviours was spent engaged in SSR. BMI was significantly associated with sedentary behaviour among some children, but not consistently across age groups. **IMPLICATIONS:** A clear understanding of young people's patterns of sedentary behaviour is required to develop effective and sustainable intervention programs to promote healthy living.

28. Pastorino AC, Rimazza RD, Leone C, Castro AP, Sole D, Jacob CM. Risk factors for asthma in adolescents in a large urban region of Brazil. *J Asthma* 2006 November;43(9):695-700.

**Background.** Identify risk factors for asthma in adolescents from Sao Paulo, Brazil. **Methods.** total of 528 adolescents (141 asthmatics, 387 control subjects) from the ISAAC study (phase III) were submitted to a complementary questionnaire to evaluate risk factors, through response to questions regarding personal history, environment, and diet and an agreement to undergo the skin prick test (SPT) for aeroallergens. **Results.** Positive

SPT to at least one allergen occurred in 49.4% adolescents. The risk factors for asthma were: prematurity (OR: 3.84, 95% CI: 1.54-9.64), rhinitis (OR: 3.18, 95% CI: 1.71-5.91), positivity in the SPT (OR: 2.81, 95% CI: 1.48-5.32), eczema in characteristic skin-folds (OR: 2.86, 95% CI: 1.13-7.26), and an allergic mother (OR: 2.01, 95% CI: 1.02-3.93). The consumption of cooked vegetables was a protective factor for asthma (OR: 0.37, 95% CI: 0.18-0.79) Conclusions. Asthma is a multifactorial disease. An allergic mother, aeroallergen sensitization, rhinitis, eczema and prematurity were considered risk factors and the consumption of cooked vegetables was considered a protective factor for asthma in this population.

## **Topic F: Community Interventions and Research**

29. Freeman ER, Brugge D, nett-Bradley WM, Levy JI, Carrasco ER. Challenges of Conducting Community-Based Participatory Research in Boston's Neighborhoods to Reduce Disparities in Asthma. *J Urban Health* 2006 November;83(6):1013-21.

Boston is one of the preeminent health care and research centers in the world, but for much of its urban core, these resources are largely out of reach. Community Based Participatory Research (CBPR) provides a model with the potential to bridge the gaps between its research prominence and the health of its residents. We report here two case studies of major research projects that were partnerships between universities in Boston and community based organizations and city agencies. The Healthy Public Housing Initiative (HPHI) and the Asthma Center on Community Environment and Social Stress (ACCESS) are projects that provide numerous lessons about the potential and challenges of conducting CBPR. Ensuring that the projects were true partnerships emerged as key issues in both, especially with respect to funding mechanisms and distribution of resources, although the nature of the challenges differed substantially in the two projects. We note that both academic and community partners may harbor stereotypes about the other and that generalizations about broad populations, academics or community members, may not apply well to everyone. Aligning objectives and expectations emerged as another key lesson. In HPHI, tension between service delivery and research was both a source of conflict and a source of creative development that led to divergent but interesting outcomes. In ACCESS, the tensions revolved more around community capacity building while attempting to build and maintain a large cohort for epidemiological investigations. We conclude that open and frank discussion and a transparent process upfront about project direction, finances, expectations, and other dimensions are necessary but not sufficient to address the inherent challenges in CBPR, and that even so, there are likely to be differences in perspective in such partnerships that require honest negotiation throughout the process of the project.

30. Grady C, Hampson LA, Wallen GR, Rivera-Goba MV, Carrington KL, Mittleman BB. Exploring the ethics of clinical research in an urban community. *Am J Public Health* 2006 November;96(11):1996-2001.

**OBJECTIVES:** We consulted with representatives of an urban community in Washington, DC, about the ethics of clinical research involving residents of the community with limited access to health care. **METHODS:** A semistructured community

consultation was conducted with core members of the Health Partnership Program of the National Institute of Arthritis and Musculoskeletal and Skin Diseases. Three research case examples were discussed; questions and probes (a predetermined question or series of questions used to further investigate or follow-up a response) guided the discussion. RESULTS: The community representatives who took part in the consultation were supportive of research and appreciated the opportunity to be heard. They noted the importance of respecting the circumstances, values, needs, and welfare of research participants; supported widely representative recruitment strategies; and cited the positive benefits of providing care or treatment to participants. Monitoring participants' welfare and ensuring care at a study's end were emphasized. Trust was a central theme; participants suggested several trust-enhancing strategies, including full disclosure of information and the involvement of advocates, physicians, and trusted church members. CONCLUSIONS: Several important strategies emerged for conducting ethical research in urban communities whose residents have limited access to health care.

31. Semenza JC, March TL, Bontempo BD. Community-Initiated Urban Development: An Ecological Intervention. *J Urban Health* 2006 November 23; [Epub ahead of print].

Neglected urban environments have been linked to social isolation, depression, and other health problems. In Portland, OR in 2003, an intervention was implemented and evaluated in three neighborhoods with the objective of promoting community participation in urban renewal and engaging residents in the construction of attractive urban places. Municipal officials approved and permitted community-designed street murals, public benches, planter boxes, information kiosks with bulletin boards, trellises for hanging gardens, all positioned in the public right-of-way. Residents within a two-block radius of the three sites were systematically sampled and interviewed before (N = 325) and after (N = 349) the intervention, of which, 265 individuals completed both surveys of the panel study. After the intervention, multivariate results revealed improvements in mental health (p = 0.03), increased sense of community (p < 0.01), and an overall expansion of social capital (p = 0.04). Through community empowerment, participation, and collective action, the strategy successfully engaged residents in restoring neighborhoods, with direct benefits to community well-being.

### **Topic G: Special Populations**

32. Greaves IA, Sexton K, Blumenthal MN et al. Asthma, atopy, and lung function among racially diverse, poor inner-urban Minneapolis schoolchildren. *Environ Res* 2006 November 22; [Epub ahead of print].

As part of an assessment of schoolchildren's environmental exposures and health, a probability sample of 136 children from diverse racial/ethnic backgrounds was drawn from grades 2-5 of two inner-urban Minneapolis schools (Whittier, Lyndale). Questionnaires were administered to a parent/guardian; blood samples for IgE and lung function tests were obtained. Overall adjusted rates for lifetime asthma (15.4%; 95%CI 9.3-21.5%), asthma in the last 12 months (13.6%; 7.8-19.4%), and current asthma medication use (10.5%; 5.3-15.7%) were higher than reported US national rates.

Adjusted rates for lifetime physician-diagnosed asthma differed significantly among racial/ethnic groups ( $P < 0.01$ ): African-Americans (25.9%), White/Others (25.8%), Hispanics (9.3%), Somalis (1.8%), Asians (0%). Corresponding rates for atopy (total IgE  $> 100$  IU/mL or an allergen-specific IgE  $> 0.35$  IU/mL) were: African-Americans (66.6%), White/Others (100%), Hispanics (77.2%), Somalis (78.1%), Asians (81.8%). Lung function (FEV(1), FVC) was analyzed by linear regression using log-transformed data: significant race-specific differences in lung function were found relative to White/Others ( $P < 0.001$  for each racial/ethnic group): African-Americans (FEV(1) -16.5%, FVC -16.9%), Somalis (-22.7%, -26.8%), Hispanics (-12.2%, -11.4%) and Asians (-11.1%, -12.4%). Females had significantly lower FEV(1) (-8.8%) and FVC (-11.0%) than males. An unexplained, significant difference in children's lung function was found between the two schools. A history of physician-diagnosed asthma was not associated with decreased lung function. Factors other than poverty, inner-urban living, and IgE levels (atopy) need to be considered in the development of childhood asthma.

33. Whitman S, Silva A, Shah AM. Disproportionate impact of diabetes in a Puerto Rican community of Chicago. *J Community Health* 2006 December;31(6):521-31.

We assessed the impact of diabetes in a large Puerto Rican community of Chicago by measuring the prevalence of diagnosed diabetes and calculating the diabetes mortality rate. Data were analyzed from a comprehensive health survey conducted in randomly selected households in community areas. Questions on diagnosed diabetes and selected risk factors were asked. In addition, vital records data were analyzed in order to calculate the age-adjusted diabetes mortality rate. When possible, rates were compared to those found in other studies. The diabetes prevalence located in this community (20.8%; 95% CI = 10.1%-38.0%) is the highest ever reported for Puerto Ricans and one of the highest ever reported in the United States for a non-Native American population. For instance, it is twice the prevalence for Puerto Ricans in New York (11.3%) and Puerto Rico (9.3%-9.6%). Diagnosed diabetes was found to be significantly associated with obesity ( $p = 0.023$ ). The prevalence was particularly high among older people, females, those born in the US, and those with a family history of diabetes. Notably, the diabetes mortality rate (67.6 per 100,000 population) was more than twice the rate for all of Chicago (31.2) and the US (25.4). Understanding why the diabetes prevalence and mortality rates for Puerto Ricans in this community are so much higher than those of other communities is imperative for primary and secondary prevention. Collaboration between researchers, service providers and community members can help address the issues of diabetes education, early screening and diagnosis, and effective treatment needed in this community.

34. Mitchell MD, Hargrove GL, Collins MH, Thompson MP, Reddick TL, Kaslow NJ. Coping variables that mediate the relation between intimate partner violence and mental health outcomes among low-income, African American women. *J Clin Psychol* 2006 December;62(12):1503-20.

Coping variables that mediate the relation between intimate partner violence (IPV) and mental health outcomes among African American women were investigated. The study sample included 143 economically disadvantaged African American women ranging in

age from 21 to 64 years old who were receiving services at an urban public health system. Sixty-five had experienced IPV within the past year and 78 had never experienced IPV. Results indicated that (a) the IPV status-depressive symptoms link was mediated by multiple ways of coping, spiritual well-being, and social support; (b) the IPV status-anxiety symptoms link was mediated by multiple ways of coping, social support, and ability to access resources; and (c) the IPV status-parenting stress link was mediated by multiple ways of coping, spiritual well-being, and social support. Implications of these findings for clinical practice with abused women are discussed.

35. Lawsin C, Duhamel K, Weiss A, Rakowski W, Jandorf L. Colorectal Cancer Screening among Low-Income African Americans in East Harlem: A Theoretical Approach to Understanding Barriers and Promoters to Screening. *J Urban Health* 2006 December 21; [Epub ahead of print].

African Americans (AAs) have the highest incidence rates of colorectal cancer (CRC) among all races in the US. These disparities may be attributed to lower participation in CRC prevention and control activities [e.g., flexible sigmoidoscopy (FS), fecal occult blood testing (FOBT)]. This is a current issue in East Harlem where less than half the residents in this area participate in CRC screening and mortality rates due to CRC are higher than the national average. We examined correlates of FS and FOBT screening among AAs based on the transtheoretical model (TTM) of behavior change. One hundred and eleven AA men and women, 50 years and older (51-92), low-income, and at average risk for CRC were recruited at an ambulatory care center in East Harlem. Assessments focused on sociodemographic, medical, psychosocial and TTM variables. The first logistic regression model showed that higher levels of education ( $p < 0.05$ ), greater knowledge of FS ( $p < 0.05$ ), and greater endorsements of Thinking Beyond Oneself ( $p < 0.05$ ) were associated with adherence to FS screening guidelines. The second model showed that only greater knowledge of FOBT ( $p < 0.05$ ) and receiving a physician's recommendation ( $p < 0.01$ ) were significant correlates of adherence to FOBT screening guidelines. This study supported the application of components of the TTM for FS and FOBT screening among low-income AAs receiving care in an urban medical center and illustrated the need for interventions targeting both patients and their providers.

36. Dornelas EA, Stepnowski RR, Fischer EH, Thompson PD. Urban Ethnic Minority Women's Attendance at Health Clinic vs. Church Based Exercise Programs. *J Cross Cult Gerontol* 2006 November 28; [Epub ahead of print].

Older, sedentary, urban-living, ethnic minority women are at high risk for preventable disease, but it is difficult to engage this population in health promotion efforts. This study tested two methods of engaging Hispanic and African American women, who were at high risk for cardiovascular disease, in a 10-week aerobic fitness program. The program was offered to 76 participants, in either a women's health clinic or a church. Attendance was the primary dependent variable and was recorded at each exercise session. Other variables, including the Baecke Questionnaire of Habitual Physical Activity, Fat Frequency Questionnaire, Self-Efficacy for Exercise Behaviors Scale, Social Support and Exercise Survey, and Psychological General Well-Being Schedule, were measured prior to the intervention, at the end of the 10-week program, and at 3-month follow-up. Age

predicted attendance, independently of site. Women in the highest age quartile (50 - 70 years) attended more than twice as many exercise sessions compared to women in the lowest age quartile (17 - 27 years). The relationship between older age and attendance was particularly strong for Hispanic women. Church parishioners were primarily women over the age of 40, making it impossible to disentangle the relative effect of locale. These findings are relevant for clinicians who design exercise programs targeting older, ethnic, minority women. Administrators who design exercise programs for urban-living women should consider age of the target population when selecting the most conducive setting.

37. Lampinen TM, Bonner SJ, Rusch M, Hogg RS. High prevalence of smoking among urban-dwelling Canadian men who have sex with men. *J Urban Health* 2006 November;83(6):1143-50.

A small but consistent literature from the United States suggests increased risk for smoking among lesbians and men who have sex with men (MSM). Few studies have investigated smoking among MSM in other countries where different social norms and restrictions on smoking in public apply. We measured smoking behaviours in a convenience sample of urban-dwelling young Canadian MSM (median age 28 years). We compared the prevalence of smoking among MSM with that among other men in British Columbia (BC) using National Population Health Survey data to compute an age-adjusted standardized prevalence ratio (SPR). Independent predictors of smoking among MSM were identified using adjusted odds ratios (OR) with 95% confidence intervals (CI). Smoking during the previous year was reported by twice as many MSM (54.5% of 354) as other men in BC (25.9%) (SPR = 1.94, 95% CI 1.48-2.59), with largest differentials observed among men under 25 years of age. In multivariable analyses, smoking among MSM was significantly associated with younger age (OR 0.94, CI 0.88-1.00 per year), greater number of depressive symptoms (OR 1.12, CI 1.06-1.19 per symptom) and Canadian Aboriginal ethnicity (OR 2.64, CI 1.05-6.60). In summary, MSM in our study were twice as likely to smoke as other men in BC; the greatest differences were observed among the youngest men. The design of effective prevention and cessation programs for MSM will require identification of the age-dependent determinants of smoking initiation, persistence, and attempts to quit.

38. Grimley DM, Annang L, Lewis I et al. Sexually transmitted infections among urban shelter clients. *Sex Transm Dis* 2006 November;33(11):666-9.

**BACKGROUND:** Sexually transmitted infections (STIs) remain common in the United States. One contributor to this persistent problem is pockets of infection among persons who may not have regular access to health care, a group that includes those who seek services at shelters. **OBJECTIVE:** The goals of the study were to: 1) determine the acceptability of STI testing among individuals seeking services at shelters in 2 midsized southeastern cities; 2) evaluate the prevalence of chlamydia, gonorrhea, syphilis, and HIV among these individuals; and 3) assess the proportion that subsequently learned their test results and received timely and appropriate treatment if warranted. **STUDY DESIGN:** Using a cross-sectional design, 430 individuals between the ages of 19 and 45 seen at 3 shelters in 2 cities were approached for participation. After completing a brief behavioral assessment, each participant provided a urine specimen for Chlamydia trachomatis (CT)

and *Neisseria gonorrhoeae* (GC) testing, blood for syphilis serologic testing, and an oral sample for HIV testing. RESULTS: The overall recruitment rate was 97% (96% in city A and 98% in city B). Seventy-eight percent were black with a mean age of 35.1 years. STI prevalence among those reporting sexual activity in the past 2 months was 12.9% in city A and 19.9% in city B ( $P = 0.04$ ). The rate of CT in city B was significantly higher than city A (15.0% vs. 6.4%,  $P = 0.02$ ); however, similar rates were found for GC (5.0% vs. 3.2%), primary and secondary syphilis (0.08% vs. 1.4%), and HIV (0.07% vs. 0.06%). Overall, 91.5% of the positive cases (89.0% in city A and 94.0% in city B) learned their test results and were successfully treated. CONCLUSION: We found that shelter clients were receptive to STI testing, even for HIV, with most positive cases notified and successfully treated.

### **Topic H: Urban Health in the Developing World**

39. Hyder AA, Labinjo M, Muzaffar SS. A new challenge to child and adolescent survival in urban Africa: an increasing burden of road traffic injuries. *Traffic Inj Prev* 2006 December;7(4):381-8.

OBJECTIVES: To develop an epidemiological profile and present the burden of urban road-traffic injuries (RTI) in children and adolescents in urban Sub-Saharan Africa. METHOD: A systematic review of published and gray literature of children and adolescents  $\leq 19$  years old involved in RTI in urban regions in Sub-Saharan Africa from January 1980-December 2003. RESULTS: The mean annual incidence for urban road-traffic injuries was 109.8 per 100,000 children, and males were twice as involved as their female counterparts. Children between 10 to 14 years constitute the most frequent group involved in road crashes (36%) while pedestrians represent an average of 68% of all childhood RTI cases. Twenty Healthy Life Years per 1,000 children and adolescents are being lost annually in the region from RTI. CONCLUSIONS: There is an urgent need to develop a regional health research agenda to generate an accurate estimate of the burden of road-traffic injuries on children. This is a new challenge for child health and there is a need to raise awareness among policy makers to promote appropriate interventions.

40. Brown L, Thurman T, Bloem J, Kendall C. Sexual violence in Lesotho. *Stud Fam Plann* 2006 December;37(4):269-80.

The magnitude and characteristics of sexual violence in two urban areas of Lesotho are described based on a random household survey of 939 sexually active women aged 18-35. Sexual violence is defined as nonconsensual sex ranging from the use of threats and intimidation to unwanted touching and forced sex. Twenty-five percent of women surveyed reported ever being physically forced to have sex; 13 percent reported that forced sex was attempted; 31 percent said that they were touched against their will; and 11 percent reported being forced to touch a man's genitals. Boyfriends were the most common perpetrators of actual and attempted forced sex (66 percent and 44 percent, respectively); known community members were the most common perpetrators of touching the respondent against her will (52 percent). Currently married women and those with more education were less likely than others to report that sex was forced upon

them by an intimate partner or by another type of perpetrator. Women living in areas where a program raising awareness about sexual violence was ongoing were more likely to report a history of sexual violence. Given the high prevalence of HIV in Lesotho, programs should address women's right to control their sexuality.

41. Chhabra P, Sharma AK, Tupil KA. Obstetric and neonatal outcomes in women who live in an urban resettlement area of Delhi, India: a cohort study. *J Obstet Gynaecol Res* 2006 December;32(6):567-73.

**AIM:** To study the pregnancy outcome, namely mode and place of delivery, attendant at birth and perinatal mortality in an urban resettlement area of Delhi, India, and to determine factors that affect the outcome. **METHODS:** All the pregnant women (n = 909) in the area were enrolled and followed until 7 days after delivery. We calculated the crude and adjusted odds ratios for predictors of pregnancy related obstetric and neonatal outcomes, using logistic regression analysis. **RESULTS:** A total of 884 (97.3%) women could be followed up. Approximately two-thirds of deliveries took place at home. Primigravida, more educated mothers and mothers with non-cephalic presentation or complications were more likely to deliver in a health facility ( $P < 0.05$ ). Most deliveries (97%) were vaginal, 2.5% were cesarean and 0.5% forceps deliveries. Primigravida mothers, mothers with short stature, mothers with non-cephalic presentation or complications had cesarean and forceps delivery more often ( $P < 0.05$ ). A perinatal mortality rate of 74.5 per 1000 live births was observed. Presentation of the fetus and complications in the mother remained important factors. **CONCLUSION:** The majority of deliveries in the under-privileged sections in urban Delhi take place at home and the perinatal mortality remains high.

42. Rahi M, Taneja DK, Misra A, Mathur NB, Badhan S. Newborn care practices in an urban slum of Delhi. *Indian J Med Sci* 2006 December;60(12):506-13.

**BACKGROUND:** Despite efforts by government and other agencies, neonatal morbidity and mortality continues to be high in India. Among other reasons, newborn care practices are major contributors for such high rates. **AIMS:** To find out the newborn care practices including delivery practices, immediate care given after birth and breast-feeding practices in an urban slum of Delhi. **SETTINGS AND DESIGN:** Community based, cross-sectional survey in a resettlement colony (a type of urban slum). **MATERIALS AND METHODS:** Semi-structured, pre-tested schedule was used to interview 82 mothers of newborns in the study area. **STATISTICAL ANALYSIS:** Data was analyzed using Epi - info version 6.04. Fischer exact test and chi2 test were applied. A P value of less than 0.05 was considered significant. **RESULTS AND CONCLUSION:** More than half i.e. 26 (56.1%) of home deliveries, which were mostly conducted by dais (24, 91.3%) or relatives in 4 (8.7%) of home deliveries. Bathing the baby immediately after birth was commonly practiced in 38 (82.6%) of home deliveries. Finger was used to clean the air passage in most of the home deliveries (29, 63%). About 61% (28) of home delivered newborns were not weighed at birth. Rooming in was practiced in majority of the cases. A few of home delivered neonates (12) were given injection tetanus toxoid by unqualified practitioners. Use of clip, band or sterile thread to tie the cord and no application to the cord was significantly higher in institutional deliveries. Breast milk as

the first feed was significantly more in institutional deliveries. There is an urgent need to reorient health care providers and to educate mothers on clean delivery practices and early neonatal care.