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## **Urban Health Literature Review**

January-February 2007

**Topic A: Urban Neighborhoods and Communities**

**Topic B: Adolescents and Children**

**Topic C: Women's Health**

**Topic D: Injection Drug Use**

**Topic E: Homelessness**

**Topic F: Correctional Facilities**

### **Topic A: Urban Neighborhoods and Communities**

1. Wakefield S, Yeudall F, Taron C, Reynolds J, Skinner A. Growing urban health: Community gardening in South-East Toronto. *Health Promot Int* 2007 February 26; [Epub ahead of print].

This article describes results from an investigation of the health impacts of community gardening, using Toronto, Ontario as a case study. According to community members and local service organizations, these gardens have a number of positive health benefits. However, few studies have explicitly focused on the health impacts of community gardens, and many of those did not ask community gardeners directly about their experiences in community gardening. This article sets out to fill this gap by describing the results of a community-based research project that collected data on the perceived health impacts of community gardening through participant observation, focus groups and in-depth interviews. Results suggest that community gardens were perceived by gardeners to provide numerous health benefits, including improved access to food, improved nutrition, increased physical activity and improved mental health. Community gardens were also seen to promote social health and community cohesion. These benefits were set against a backdrop of insecure land tenure and access, bureaucratic resistance, concerns about soil contamination and a lack of awareness and understanding by community members and decision-makers. Results also highlight the need for ongoing resources to support gardens in these many roles.

2. Semenza JC, March TL, Bontempo BD. Community-initiated urban development: an ecological intervention. *J Urban Health* 2007 January;84(1):8-20.

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.

3. Cohen DA, McKenzie TL, Sehgal A, Williamson S, Golinelli D, Lurie N. Contribution of public parks to physical activity. *Am J Public Health* 2007 March;97(3):509-14.

**OBJECTIVES:** Parks provide places for people to experience nature, engage in physical activity, and relax. We studied how residents in low-income, minority communities use public, urban neighborhood parks and how parks contribute to physical activity.

**METHODS:** In 8 public parks, we used direct observation to document the number, gender, race/ethnicity, age group, and activity level of park users 4 times per day, 7 days per week. We also interviewed 713 park users and 605 area residents living within 2 miles of each park. **RESULTS:** On average, over 2000 individuals were counted in each park, and about two thirds were sedentary when observed. More males than females used the parks, and males were twice as likely to be vigorously active.

Interviewees identified the park as the most common place they exercised. Both park use and exercise levels of individuals were predicted by proximity of their residence to the park. **CONCLUSIONS:** Public parks are critical resources for physical activity in minority communities. Because residential proximity is strongly associated with physical activity and park use, the number and location of parks are currently insufficient to serve local populations well.

4. Cerin E, Leslie E, Toit LD, Owen N, Frank LD. Destinations that matter: Associations with walking for transport. *Health Place* 2007 January 17; [Epub ahead of print].

Associations between access to destinations and walking for transport were examined. Households (N=2650) were selected from 32 urban communities varying in walkability and socio-economic status. Respondents reported perceived proximity of destinations, transport-related walking, reasons for neighbourhood selection, and socio-demographic characteristics. Geographic Information Systems data defined objective measures of access to destinations. Measures of access to destinations were associated with transport-related walking. Associations depended on socio-demographic factors and type of destinations. Workplace proximity was the most significant contributor to transport-related walking, especially among women. Regular walking to work resulted in the accrual of sufficient physical activity for health benefits.

5. Ross NA, Tremblay S, Khan S, Crouse D, Tremblay M, Berthelot JM. Body mass index in urban Canada: neighborhood and metropolitan area effects. *Am J Public Health* 2007 March;97(3):500-8.

**OBJECTIVES:** We investigated the influence of neighborhood and metropolitan area characteristics on body mass index (BMI) in urban Canada in 2001. **METHODS:** We conducted a multilevel analysis with data collected from a cross-sectional survey of men and women nested in neighborhoods and metropolitan areas in urban Canada during 2001. **RESULTS:** After we controlled for individual sociodemographic characteristics and behaviors, the average BMIs of residents of neighborhoods in which a large proportion of individuals had less than a high school education were higher than those BMIs of residents in neighborhoods with small proportions of such individuals ( $P < .01$ ). Living in a neighborhood with a high proportion of recent immigrants was associated with lower BMI for men ( $P < .01$ ), but not for women. Neighborhood dwelling density was not associated with BMI for either gender. Metropolitan sprawl was associated with higher BMI for men ( $P = .02$ ), but the effect was not significant for women ( $P = .09$ ). **CONCLUSIONS:** BMI is strongly patterned by an individual's social position in urban Canada. A neighborhood's social condition has an incremental influence on the average BMI of its residents. However, BMI is not influenced by dwelling density. Metropolitan sprawl is associated with higher BMI for Canadian men, which supports recent evidence of this same association among American men. Individuals and their environments collectively influence BMI in urban Canada.

6. Aneshensel CS, Wight RG, Miller-Martinez D, Botticello AL, Karlamangla AS, Seeman TE. Urban neighborhoods and depressive symptoms among older adults. *J Gerontol B Psychol Sci Soc Sci* 2007 January;62(1):S52-S59.

**OBJECTIVE:** This study seeks to determine whether depressive symptoms among older persons systematically vary across urban neighborhoods such that experiencing more symptoms is associated with low socioeconomic status (SES), high concentrations of ethnic minorities, low residential stability and low proportion aged 65 years and older. **METHODS:** Survey data are from the Study of Assets and Health Dynamics Among the Oldest Old (AHEAD), a 1993 U.S. national probability sample of noninstitutionalized persons born in 1923 or earlier (i.e. people aged 70 or older). Neighborhood data are from the 1990 Census at the tract level. Hierarchical linear regression is used to estimate multilevel models. **RESULT:** The average number of depressive symptoms varies across Census tracts independent of individual-level characteristics. Symptoms are not significantly associated with neighborhood SES, ethnic composition, or age structure when individual-level characteristics are controlled statistically. However, net of individual-level characteristics, symptoms are positively associated with neighborhood residential stability, pointing to a complex meaning of residential stability for the older population. **DISCUSSION:** This study shows that apparent neighborhood-level socioeconomic effects on depressive symptoms among urban-dwelling older adults are largely if not entirely compositional in nature. Further, residential stability in the urban neighborhood may not be emotionally beneficial to its aged residents.

7. Leon BG, Berglund N, Nordling E, Rosenlund M. Road traffic noise and hypertension. *Occup Environ Med* 2007 February;64(2):122-6.

**BACKGROUND:** It has been suggested that noise exposure increases the risk of hypertension. Road traffic is the dominant source of community noise exposure. **OBJECTIVE:** To study the association between exposure to residential road traffic noise and hypertension in an urban municipality. **METHODS:** The study population comprised randomly selected subjects aged 19-80 years. A postal questionnaire provided information on individual characteristics, including diagnosis of hypertension. The response rate was 77%, resulting in a study population of 667 subjects. The outdoor equivalent traffic noise level (Leq 24 h) at the residence of each individual was determined using noise-dispersion models and manual noise assessments. The individual noise exposure was classified in units of 5 dB(A), from <45 dB(A) to >65 dB(A). **RESULTS:** The odds ratio (OR) for hypertension adjusted for age, smoking, occupational status and house type was 1.38 (95% confidence interval (CI) 1.06 to 1.80) per 5 dB(A) increase in noise exposure. The association seemed stronger among women (OR 1.71; 95% CI 1.17 to 2.50) and among those who had lived at the address for >10 years (OR 1.93; 95% CI 1.29 to 2.83). Analyses of categorical exposure variables suggested an exposure-response relationship. The strongest association between exposure to traffic noise and hypertension was found among those with the least expected misclassification of true individual exposure, as indicated by not having triple-glazed windows, living in an old house and having the bedroom window facing a street (OR 2.47; 95% CI 1.38 to 4.43). **CONCLUSION:** The results of our study suggest an association between exposure to residential road traffic noise and hypertension.

8. Stahler GJ, Mazzella S, Mennis J, Chakravorty S, Rengert G, Spiga R. The effect of individual, program, and neighborhood variables on continuity of treatment among dually diagnosed individuals. *Drug Alcohol Depend* 2007 February 23;87(1):54-62.

This study reviewed the medical charts of 271 patients diagnosed with co-morbid mental health and substance-use disorders who were discharged from a hospital acute inpatient unit to various outpatient treatment programs in Philadelphia. Geographic Information Systems (GIS) technology and logistic regression modeling were employed to investigate the effects of individual, neighborhood, and program-level variables on arrival to the first treatment appointment within 30 days of discharge. Four models are presented. The results of the study suggest that having had three or more treatment episodes prior to inpatient hospitalization, and living in a neighborhood in which temporary or transitional, and presumably, other low income housing is located, increased the likelihood of patients continuing with treatment in the community. Discharge to the preadmission address, a chief complaint of bizarre behavior, close proximity of two or more liquor and/or beer stores, a high density of narcotics anonymous (NA) and/or alcoholics anonymous (AA) meetings within the neighborhood, an axis I diagnosis of substance-induced mood disorder, and a urine drug screen positive for heroin reduced the likelihood of attending outpatient treatment. We conclude that geographic and community variables as they relate to substance abuse may add an important dimension to our understanding of patient functioning and well being in the community following inpatient treatment.

9. de Mattos Almeida MC, Caiaffa WT, Assuncao RM, Proietti FA. Spatial Vulnerability to Dengue in a Brazilian Urban Area During a 7-Year Surveillance. *J Urban Health* 2007 January 23; [Epub ahead of print].

This study considers the vulnerability of the urban area of the City of Belo Horizonte to dengue. A total number of 89,607 cases registered in the surveillance system from 1996 to 2002 were analyzed. Seven epidemic waves were identified during this period. Cases were grouped into 2,563 census areas, and three risk categories were proposed based on how many times each area reached a threshold established for each epidemic wave. The association between the risk categories and the socioeconomic, demographic and urban-infrastructure characteristics was evaluated. Analysis included Kruskal-Wallis test variance comparisons and multivariate regression using multinomial models. Incidence rates differed significantly among the three risk categories in most of the epidemic waves. The factors that best characterized the areas were low educational level ( $\leq 4$  years of schooling), low income of the head of the family ( $\leq 2$  minimum wages per household), household density, and proportion of children and elderly women. Information related to basic sanitation was not enough to discriminate levels of susceptibility to dengue, and study of population density and concentration of establishments considered vulnerable to vector infestation yielded questionable results. It is important to consider different levels of exposure of the population to explain the heterogeneous pattern of distribution of dengue cases in an urban setting. Understanding the dynamics of dengue fever is essential for surveillance purposes, to improve control measures and to avoid epidemics of this disease.

10. Bradley HA, Puoane T. Prevention of hypertension and diabetes in an urban setting in South Africa: participatory action research with community health workers. *Ethn Dis* 2007;17(1):49-54.

The project aimed to identify factors that contribute to hypertension and diabetes and to design and implement appropriate local interventions to prevent these noncommunicable diseases and promote healthy lifestyles. This was a community-based participatory action research project in which researchers and community health workers (CHWs) were the main participants. The triple A approach to planning interventions was used, that is, the process of assessing the situation, analyzing the findings, and taking action based on this analysis. Both qualitative and quantitative methods were employed. Twenty-two CHWs working in site C, Khayelitsha, a deprived urban area of Cape Town, South Africa, participated in the study. Findings from the situational assessment indicated a lack of knowledge among CHWs and the community about hypertension and diabetes and the risk factors for these non-communicable diseases. Economic constraints and cultural beliefs and practices influenced the community's food choices and participation in physical activity. On the basis of these findings, a training program was proposed that would provide CHWs with the skills to prevent hypertension and diabetes in their community. A program was developed and piloted by the project team. A health club that focuses on promoting healthy lifestyles is currently being piloted. This paper illustrates the unique involvement of CHWs in a successful participatory action research project on the prevention of hypertension and diabetes and promotion of health in a deprived urban setting. The project emphasizes

the importance of involving local people in community-based initiatives to promote health and identifies that the primary role of health services is to develop appropriate skills in the local community, monitor activities, and facilitate a link with primary health services.

11. Vaughan R, Cushman LF, Nye A. The New York City Community Outreach Study: biomedical and mental health status among a community sample of urban Hispanics. *Ethn Dis* 2007;17(1):99-105.

**OBJECTIVE:** This report provides a snapshot of health behavior and risk in one low-income, urban, Latino community. As part of a community health and education program, 200 adult residents were asked about their health status and behavior and screened for conditions known to constitute significant health risk. **DESIGN:** A random sample of 10 buildings around a large community-based organization (CBO) service area was selected to receive personal invitation and/or door-to-door flyers announcing several days of free health screening and education at the CBO. All individuals age > or = 18 years were eligible. Those who received screening were mailed lay descriptions of their results along with recommendations and locations for follow-up, if appropriate. **SETTING AND PARTICIPANTS:** Participants were adult residents of an economically and medically under-served district in New York City, where Latinos make up approximately 75% of the population. Free screening for high blood pressure, diabetes, high cholesterol, obesity, and depression was provided. **MAIN OUTCOME MEASURES:** The clinical outcomes of the aforementioned tests constitute the main outcomes of this report. **RESULTS:** Compared to national estimates for Hispanics, health risk was quite high in this sample, particularly with regard to diabetes and cholesterol. Moreover, participants were much less likely to have insurance or to have a regular source of health care than reported in national studies of Hispanics. **CONCLUSIONS:** Though site specific, these data provide critical information to local CBOs and can be used as a tool for comparison with national data and Healthy People 2010 goals.

## **Topic B: Adolescents and Children**

12. Busse WW, Mitchell H. Addressing issues of asthma in inner-city children. *J Allergy Clin Immunol* 2007 January;119(1):43-9.

For children living in the inner city, asthma tends to be more frequent and severe. Although the causes for this heightened severity of asthma are not clearly established, environmental allergens likely play a major role. To characterize, understand, and treat children with asthma living in the inner city better, the National Institutes of Allergy and Infectious Diseases of the National Institutes of Health established an Inner City Asthma Program in 1991. Over the past 15 years, 3 separate inner-city asthma research networks have been formed and funded by this institute. The work from these programs has led to important observations including evidence that environmental allergens, particularly cockroach, are important for sensitization and severity of asthma of the

affected children. Furthermore, reductions in the allergen load can lead to improved asthma control. The most recent program, the Inner City Asthma Consortium, was formed in 2002 with a goal to develop immune-based therapy for children with asthma in the inner city and to determine mechanisms of these therapies as well as immunopathogenesis of asthma in these high-risk children. This article reviews these programs and how they have begun the effort to understand and treat children with asthma who live in inner cities better and what their findings mean in relationship to unique features of asthma in inner city children.

13. Joseph CL, Baptist AP, Stringer S et al. Identifying students with self-report of asthma and respiratory symptoms in an urban, high school setting. *J Urban Health* 2007 January;84(1):60-9.

Strategies for identifying urban youth with asthma have not been described for high school settings. African-American high school students are rarely included in asthma studies, despite a high risk of asthma mortality when compared to other age and race groups. Identification and follow-up of children with uncontrolled respiratory symptoms are necessary to reduce the burden of asthma morbidity and mortality, especially in underserved areas. We describe a process used to identify high school students who could benefit from intervention based on self-report of asthma and/or respiratory symptoms, and the costs associated with symptom-identification. Letters announcing a survey were mailed to parents of 9th-11th graders by an authorized vendor managing student data for the school district. Scan sheets with student identifiers were distributed to English teachers at participating schools who administered the survey during a scheduled class. Forms were completed by 5,967 of the 7,446 students assigned an English class (80% response). Although prevalence of lifetime asthma was 15.8%, about 11% of students met program criteria for enrollment through report of an asthma diagnosis and recent symptoms, medication use, or health care utilization. Another 9.2% met criteria by reported symptoms only. Cost of symptom-identification was \$5.23/student or \$32.29/program-eligible student. There is a need for school-based asthma programs targeting urban adolescents, and program initiation will likely require identification of students with uncontrolled symptoms. The approach described was successfully implemented with a relatively high response rate. Itemized expenses are presented to facilitate modifications to reduce costs. This information may benefit providers, researchers, or administrators targeting similar populations.

14. Greaves IA, Sexton K, Blumenthal MN et al. Asthma, atopy, and lung function among racially diverse, poor inner-urban Minneapolis schoolchildren. *Environ Res* 2007 February;103(2):257-66.

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<sub>1</sub>, 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<sub>1</sub> -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<sub>1</sub> (-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.

15. 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* 2007 February 5;168(3):200-9.

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.

16. Kuo J, Voorhees CC, Haythornthwaite JA, Young DR. Associations between family support, family intimacy, and neighborhood violence and physical activity in urban adolescent girls. *Am J Public Health* 2007 January;97(1):101-3.

We examined the association between various dimensions of the family environment, including family intimacy and involvement in activities, family support for physical activity, and neighborhood violence (perceived and objective) and physical activity among urban, predominantly African American, ninth-grade girls in Baltimore, Md. Greater family intimacy ( $P = .05$ ) and support ( $P = .01$ ), but not neighborhood violence, was associated with physical activity. Family factors, including family intimacy and support, are potential targets in physical activity interventions for urban high-school girls.

17. Ruchkin V, Henrich CC, Jones SM, Vermeiren R, Schwab-Stone M. Violence Exposure and Psychopathology in Urban Youth: The Mediating Role of Posttraumatic Stress. *J Abnorm Child Psychol* 2007 February 27; [Epub ahead of print].

Understanding the mechanisms underlying the development of violence exposure sequelae is essential to providing effective treatments for traumatized youth. This longitudinal study examined the mediating role of posttraumatic stress in the relationship between violence exposure and psychopathology, and compared the mediated models by gender. Urban adolescents ( $n=1,358$ ) were surveyed using the Social and Health Assessment. The proposed relationships were examined using Structural Equation Modeling. Posttraumatic stress fully mediated the relationships between victimization and depression and anxiety in girls, and partially so in boys. In addition, posttraumatic stress partially mediated the relationships between violence exposure and commission of violence in boys. Current findings support the longitudinal effects of violence exposure on adolescent mental health. Posttraumatic stress represents a unique mechanism for the development of psychopathology in girls and is also related to negative outcomes in boys. These findings have direct implications for prevention and rehabilitation efforts among violence exposed youth.

18. Cho H, Hallfors DD, Iritani BJ. Early initiation of substance use and subsequent risk factors related to suicide among urban high school students. *Addict Behav* 2007 January 5; [Epub ahead of print].

**OBJECTIVE:** To examine the association between onset of substance use and risk factors related to suicide. **METHOD:** 1252 adolescents in two urban school districts completed surveys as part of a large, randomized controlled prevention effectiveness trial. Risk factors measured included depressive symptoms, suicide ideation, suicide ideation specifically with alcohol and/or drug use, endorsement of suicide as a personal option, and suicide attempt. **RESULTS:** In our final multivariate models that controlled for current substance use and demographic characteristics, we found that earlier onset of hard drug use among boys was associated with all five suicide risk factors. In comparison, among girls, earlier onset of regular cigarette smoking, getting drunk, and hard drug use was associated with some of suicide risk factors. **CONCLUSIONS:** The

findings confirm the importance of screening for substance use in early adolescence. The association between early substance use and suicide risk factors differed by gender; both research and intervention efforts need to incorporate gender differences.

19. Rothenberg R, Dan My HT, Muth SQ, Crosby R. The Atlanta Urban Adolescent Network Study: A Network View of STD Prevalence. *Sex Transm Dis* 2007 February 8; [Epub ahead of print].

**OBJECTIVES:** To examine the epidemiology of multiple infections in teenagers and their contacts. **GOAL::** To demonstrate a network approach to the prevalence of STDs/HIV. **STUDY DESIGN::** A community-based network study of ethnographically representative adolescents. **RESULTS::** Of the 512 interviewees, 90% of the boys and 80% of the girls were sexually active with many partners and exhibited age-assortative mixing. Prevalences of gonorrhea, chlamydia, and HSV-2 were high, but syphilis, Hepatitis C and HIV were virtually absent. The prevalence faced by subgroups differed from overall prevalence. **CONCLUSIONS::** The presence of bacterial STDs and the absence of HIV, HCV, and syphilis may be the result of no IDU and assortative age mixing. Testing for multiple conditions, network assessment of prevalence, and inclusion of social contacts enhance understanding of STD epidemiology.

20. Rao D, Kekwaletswe TC, Hosek S, Martinez J, Rodriguez F. Stigma and social barriers to medication adherence with urban youth living with HIV. *AIDS Care* 2007 January;19(1):28-33.

Youth adherence to highly active anti-retroviral therapy (HAART) is poor, and little research exists that identifies the reasons youth have difficulty adhering to medications. Given that complete adherence is necessary for favourable health outcomes, it is essential to examine the obstacles youth face in adhering to HAART. The present investigation sought to identify these barriers and to systematically examine the experiences and attitudes youth have towards medications. Twenty-five adolescents and young adults presenting to a public primary care facility for treatment of HIV infection were asked to participate in focus groups which explored their attitudes and experiences around medication adherence. Participants provided richly detailed descriptions of the challenges of managing HIV stigma and their efforts to hide their status from friends, family, doctors, and even themselves. Fifty percent of respondents indicated that they skipped doses because they feared family or friends would discover their status. These results suggest that HIV stigma impacts treatment for youth on several levels, from the accuracy of communication with medical providers to medication adherence, subsequent health outcomes, and the emergence of treatment resistant strains.

### **Topic C: Women's Health**

21. Datner EM, Wiebe DJ, Brensinger CM, Nelson DB. Identifying pregnant women experiencing domestic violence in an urban emergency department. *J Interpers Violence* 2007 January;22(1):124-35.

The article describes characteristics of pregnant women presenting to the Emergency Department (ED) who are experiencing current violence and presented a screening tool to identify pregnant women experiencing violence. Women completed an in-person interview regarding violence, sociodemo-graphic factors, health status, and drug use. Fifteen percent of women reported at least one episode of violence during the pregnancy. Young age (OR = 3.37, 95% CI: 1.79-6.36), current alcohol use (OR = 1.53, 95% CI: 1.06-2.19), current marijuana use (OR = 1.96, 95% CI: 1.32-2.92), less than a high school education (OR = 1.46, 95% CI: 1.01-2.12), and a prior diagnosis of trichomonas (OR = 1.81, 95% CI: 1.20-2.72) were significantly related to experiencing current violence. Screening patients using these five characteristics identified 8 out of 10 women reporting violence (sensitivity = 75.6%). These results identify a set of predictors that may be helpful in identifying pregnant women who are experiencing current domestic violence.

22. Battaglia TA, Roloff K, Posner MA, Freund KM. Improving follow-up to abnormal breast cancer screening in an urban population. A patient navigation intervention. *Cancer* 2007 January 15;109(2 Suppl):359-67.

Delays in follow-up after cancer screening contribute to racial/ethnic disparities in cancer outcomes. We evaluated a patient navigator intervention among inner-city women with breast abnormalities. A full-time patient navigator supported patients using the care management model. Female patients 18 years and above, referred to an urban, hospital-based, diagnostic breast health practice from January to June 2000 (preintervention) and November 2001 to February 2003 (intervention), were studied. Timely follow-up was defined as arrival to diagnostic evaluation within 120 days from the date the original appointment was scheduled. Data were collected via computerized registration, medical records, and patient interview. Bivariate and multivariate logistic regression analyses were conducted, comparing preintervention and intervention groups, with propensity score analysis and time trend analysis to address the limitations of the pre-post design. 314 patients were scheduled preintervention; 1018, during the intervention. Overall, mean age was 44 years; 40% black, 36% non-Hispanic white, 14% Hispanic, 4% Asian, 5% other; 15% required an interpreter; 68% had no or only public insurance. Forty-four percent of referrals originated from a community health center, 34% from a hospital-based practice. During the intervention, 78% had timely follow-up versus 64% preintervention ( $P < .0001$ ). In adjusted analyses, women in the intervention group had 39% greater odds of having timely follow-up (95% CI, 1.01-1.9). Timely follow-up in the adjusted model was associated with older age ( $P = .0003$ ), having private insurance ( $P = .006$ ), having an abnormal mammogram ( $P = .0001$ ), and being referred from a hospital-based practice, as compared to a community health center ( $P = .003$ ). Our data suggest a benefit of patient navigators in reducing delay in breast cancer care for poor and minority populations. *Cancer* 2007. (c) 2006 American Cancer Society.

23. Nash D, Chan C, Horowitz D, Vlahov D. Barriers and missed opportunities in breast and cervical cancer screening among women aged 50 and over, New York City, 2002. *J Womens Health (Larchmt)* 2007 January;16(1):46-56.

**OBJECTIVES:** Breast and cervical cancer screening both are routinely recommended for women. However, data are sparse on factors associated with joint screening behaviors. Our objective to describe the factors associated with receiving both, one, or neither screening test among women aged  $\geq 50$ . **METHODS:** Using data from the New York City Community Health Survey (NYC CHS), we compared the characteristics of women  $> 50$  (n = 2059) who missed (1) a Pap smear only, (2) mammography only, or (3) both screening procedures with the characteristics of women who received both tests. Analyses were performed using multiple logistic regression. **RESULTS:** Seventy-three percent of women had both screening tests, 6.7% needed a Pap smear only, 10% missed mammography only, and 10% missed both tests. After multiple logistic regression, missing a Pap smear only was more likely among women  $> 70$  years compared with younger women and among women from Queens than from Manhattan. Missing mammography only was more common among women not reporting a personal doctor than among those with a doctor and among uninsured women relative to the privately insured. Missing both tests was more common among women  $> 74$  years, current smokers compared with never smokers, women without a personal doctor, and the uninsured. This was less common among women from the Bronx than women from Manhattan and among racial/ethnic minorities compared with non-Hispanic white women. **CONCLUSIONS:** The predictors of each screening outcome appear to be qualitatively different. Changes in provider practices and targeted education may improve Pap smear screening rates, whereas policy initiatives and increased access for the uninsured may raise mammography rates. To achieve optimal preventive care, coscreening should be considered.

24. Hirschman J, Whitman S, Ansell D. The black:white disparity in breast cancer mortality: the example of Chicago. *Cancer Causes Control* 2007 April;18(3):323-33.

**OBJECTIVE:** The black:white disparity in breast cancer mortality has been increasing in the U.S. In order to gain insight into this disparity in Chicago, we examined mortality data together with other important measures associated with breast cancer. **METHODS:** Trends in black:white female breast cancer mortality, incidence, stage at diagnosis, and mammography screening in Chicago were examined using data from the Illinois State Cancer Registry, Illinois Department of Public Health Vital Records, and the Illinois Behavioral Risk Factor Surveillance System. **RESULTS:** The breast cancer mortality rate for black women in Chicago for 1999-2003 was 49% higher than that of white women, but the disparity is a recent phenomenon that is increasing rapidly. In 2003 the black rate was 68% higher than the white rate. Mortality rates were similar in the 1980's and only started to diverge in the 1990's as a result of a sharp improvement in mortality among white women contrasted with no improvement for black women. This lack of progress for black women is perplexing given that self-reported mammography screening rates have been the same for blacks and whites in Chicago since at least 1996 and that the early detection of breast cancer for black women has been increasing. **CONCLUSIONS:** There has been no improvement in mortality from breast cancer for black women in Chicago in 23 years. This study, along with a review of the literature, lends support to the hypothesis that the disparities in breast cancer mortality are due to differential access to mammography, differential quality in mammography, and

differential access to treatment for breast cancer. Fortunately, all three are amenable to intervention, which would help ameliorate this unacceptable disparity.

#### **Topic D: Injection Drug Use**

25. Kapadia F, Latka MH, Hagan H et al. Design and Feasibility of a Randomized Behavioral Intervention to Reduce Distributive Injection Risk and Improve Health-Care Access Among hepatitisC virus Positive Injection Drug Users: The Study to Reduce Intravenous Exposures (STRIVE). *J Urban Health* 2007 January;84(1):99-115.

Hepatitis C virus (HCV) is hyperendemic among injection drug users (IDUs). However, few scientifically proven interventions to prevent secondary transmission of HCV from infected IDUs to others exist. This report describes the design, feasibility, and baseline characteristics of participants enrolled in the Study to Reduce Intravenous Exposure (STRIVE). STRIVE was a multisite, randomized-control trial to test a behavioral intervention developed to reduce distribution of used injection equipment (needles, cookers, cottons, and rinse water) and increase health-care utilization among antibody HCV (anti-HCV) positive IDUs. STRIVE enrolled anti-HCV positive IDU in Baltimore, New York City, and Seattle; participants completed behavioral assessments and venipuncture for HIV, HCV-RNA, and liver function tests (LFTs) and were randomized to attend either a six-session, small-group, peer-mentoring intervention workshop or a time-matched, attention-control condition. Follow-up visits were conducted at 3 and 6 months. At baseline, of the 630 HCV-positive IDUs enrolled (mean age of 26 years, 60% white, 76% male), 55% reported distributive needle sharing, whereas 74, 69, and 69% reported sharing cookers, cottons, and rinse water, respectively. Health-care access was low, with 41% reporting an emergency room as their main source of medical care. Among those enrolled, 66% (418/630) were randomized: 53% (222/418) and 47% (196/418) to the intervention and control conditions, respectively. Follow-up rates were 70 and 73% for the 3- and 6-month visits, respectively. As distributive sharing of used injection equipment was common while reports of receiving HCV care were low, these findings indicate an urgent need for HCV-related interventions with IDUs and demonstrate the acceptability and feasibility to do so.

26. Vlahov D, O'driscoll P, Mehta SH et al. Risk factors for methadone outside treatment programs: implications for HIV treatment among injection drug users. *Addiction* 2007 February 15; [Epub ahead of print].

Background Diversion of methadone outside treatment programs occurs, yet reasons for use of 'street methadone' are characterized poorly. Self-medication for withdrawal symptoms is one plausible hypothesis. Among HIV-infected drug users, some antiretroviral medications can reduce potency of methadone, yet any association between such effects and the use of supplemental methadone sources remains undetermined. Objective To estimate the frequency and risk factors for use of street methadone. Methods Injection drug users (IDUs) recruited through extensive community outreach in 1988-89 and 1994 were followed semi-annually with

questionnaires about health history, use of licit and illicit drugs including methadone and HIV-related assays. Analyses were performed using generalized estimating equation logistic regression. Results Of 2811 IDUs enrolled and eligible for analysis, 493 people reported use of street methadone over 12 316 person-years of follow-up (4.0/100 person-years). In multivariate analyses, street methadone use was more common among women, whites, those 40-59 years old, those who reported withdrawal symptoms, past methadone program attendance (6-12 months before visit), recent heroin injection with or without cocaine (but not cocaine alone), smoking or sniffing heroin and reported trading sex. Street methadone was not associated with HIV infection or treatment. Conclusion The results suggest that older IDUs still using heroin may be using street methadone to treat signs of withdrawal. The absence of a higher rate of street methadone use in HIV seropositive IDUs reveals that antiretroviral/methadone interactions are not a primary determinant of use outside of treatment settings.

27. Cooper HL, Friedman SR, Tempalski B, Friedman R. Residential segregation and injection drug use prevalence among Black adults in US metropolitan areas. *Am J Public Health* 2007 February;97(2):344-52.

**OBJECTIVES:** We analyzed the relations of two 1990 dimensions of racial residential segregation (isolation and concentration) with 1998 injection drug use prevalence among Black adult residents of 93 large US metropolitan statistical areas (MSAs). **METHODS:** We estimated injection drug use prevalence among Black adults in each MSA by analyzing 3 databases documenting injection drug users' encounters with the health care system. Multiple linear regression methods were used to investigate the relationship of isolation and concentration to the natural logarithm of Black adult injection drug use prevalence, controlling for possible confounders. **RESULTS:** The median injection drug use prevalence was 1983 per 100000 Black adults (interquartile range: 1422 to 2759 per 100000). The median isolation index was 0.48 (range: 0.05 to 0.84): in half the MSAs studied, the average Black resident inhabited a census tract where 48% or more of the residents were Black. The multiple regression model indicates that an increase of 0.50 in the isolation index was associated with a 23% increase in injection drug use prevalence among Black adults. Concentration was unrelated to the outcome. **CONCLUSIONS:** Residential isolation is positively related to Black injection drug use prevalence in MSAs. Research into the pathways linking isolation to injection drug use is needed.

28. Kapadia F, Latka MH, Hudson SM et al. Correlates of consistent condom use with main partners by partnership patterns among young adult male injection drug users from five US cities. *Drug Alcohol Depend* 2007 February 26; [Epub ahead of print].

This paper examined correlates of consistent condom use with a main partner among heterosexual male injection drug users (IDUs). Using data from a multi-site sample of young IDUs, we identified 1770 sexually active men of whom 24% (429/1770) reported an exclusive main female sex partner and 49% (862/1770) reported both main and casual female sex partners. Consistent condom use with a main partner was low among men with an exclusive main partner and those with multiple partners (12% and 17%,

respectively). In multivariate analysis, consistent condom use with a main partner across partnership patterns was directly associated with anticipating a positive response to requests for condom use and by partner support of condom use; consistent condom use was inversely associated with a main partner's pregnancy desires. Among men with an exclusive main partner, consistent condom use was also inversely associated with needle sharing with a main partner. Among men with multiple partners, consistent condom use with a main partner was inversely associated with injecting with a used needle and intimate partner violence. The low prevalence of consistent condom use with main female partners among heterosexually active male IDUs indicates an increased risk for HIV transmission between men and their primary sex partners. Interventions for heterosexual males that are geared toward increasing condom use in primary relationships are warranted.

29. Fuller CM, Galea S, Caceres W, Blaney S, Sisco S, Vlahov D. Multilevel community-based intervention to increase access to sterile syringes among injection drug users through pharmacy sales in New York City. *Am J Public Health* 2007 January;97(1):117-24.

**OBJECTIVES:** Research has indicated that there is minimal use of pharmacies among injection drug users (IDUs) in specific neighborhoods and among Black and Hispanic IDUs. We developed a community-based participatory research partnership to determine whether a multilevel intervention would increase sterile syringe access through a new policy allowing nonprescription syringe sales in pharmacies.

**METHODS:** We targeted Harlem, NY (using the South Bronx for comparison), and disseminated informational material at community forums, pharmacist training programs, and counseling or outreach programs for IDUs. We compared cross-sectional samples in 3 target populations (pre- and postintervention): community members (attitudes and opinions), pharmacists (opinions and practices), and IDUs (risk behaviors). **RESULTS:** Among community members (N = 1496) and pharmacists (N = 131), negative opinions of IDU syringe sales decreased in Harlem whereas there was either no change or an increase in negative opinions in the comparison community. Although pharmacy use by IDUs (N=728) increased in both communities, pharmacy use increased significantly among Black IDUs in Harlem, but not in the comparison community; syringe reuse significantly decreased in Harlem, but not in the comparison community. **CONCLUSIONS:** Targeting the individual and the social environment through a multilevel community-based intervention reduced high-risk behavior, particularly among Black IDUs.

### **Topic E: Homelessness**

30. Saccone PA, Steiger JR. Hearing handicap among adult residents of an urban homeless shelter. *J Health Care Poor Underserved* 2007 February;18(1):161-72.

This retrospective study was undertaken to identify the prevalence of hearing loss in the homeless population and its implications for vocational rehabilitation. Audiometric threshold data for adult residents of an urban homeless shelter were collected and reported. Subjects with hearing loss were identified and defined by their binaural high-

frequency pure tone average (B-HFPTA). Those subjects were assigned a predicted Hearing Handicap Inventory for Adults-Screener (HHIA-S) score. Their HHIA-S scores, in turn, were used to predict hearing handicap and hearing aid candidacy. Significant hearing handicap was predicted for 35.6% of subjects; 10.6% were identified as hearing aid candidates. These findings have implications for vocational rehabilitation that have not been previously addressed.

31. Schanzer B, Dominguez B, ShROUT PE, Caton CL. Homelessness, health status, and health care use. *Am J Public Health* 2007 March;97(3):464-9.

**OBJECTIVES:** Little is known about the health status of those who are newly homeless. We sought to describe the health status and health care use of new clients of homeless shelters and observe changes in these health indicators over the study period. **METHODS:** We conducted a longitudinal study of 445 individuals from their entry into the homeless shelter system through the subsequent 18 months. **RESULTS:** Disease was prevalent in the newly homeless. This population accessed health care services at high rates in the year before becoming homeless. Significant improvements in health status were seen over the study period as well as a significant increase in the number who were insured. **CONCLUSION:** Newly homeless persons struggle under the combined burdens of residential instability and significant levels of physical disease and mental illness, but many experience some improvements in their health status and access to care during their time in the homeless shelter system.

32. Forney JC, Lombardo S, Toro PA. Diagnostic and other correlates of HIV risk behaviors in a probability sample of homeless adults. *Psychiatr Serv* 2007 January;58(1):92-9.

**OBJECTIVES:** This study assessed the relationship between psychiatric disorders, including substance abuse and dependence, and risk behaviors for contracting HIV. **METHODS:** A probability sample of 218 homeless men and women were recruited from food programs and shelters assisting homeless individuals in an urban metropolitan community. Mood disorders, schizophrenia, and substance abuse and dependence diagnoses were assessed with the Diagnostic Interview Schedule (version 3A). Level of sexual activity and HIV risk behaviors (such as history of sexually transmitted diseases, ratio of protected sex, trading sex for money or drugs, sex with a prostitute, and sex under the influence of alcohol or drugs) also were measured. **RESULTS:** Substance abuse and dependence and the length of the homelessness episode at baseline were associated with the highest risk of engaging in HIV risk behaviors. However, there was no relationship between mood disorders, schizophrenia, and HIV risk behaviors. **CONCLUSIONS:** This study provides evidence that individuals who are homeless for extended periods and have a diagnosis of substance abuse or dependence may be especially vulnerable to engaging in risky sexual behaviors and contracting HIV. The findings highlight the importance of tailoring treatment programs to the specific needs of homeless individuals.

33. Story A, Murad S, Verheyen M, Roberts W, Hayward AC. Tuberculosis in London - the importance of homelessness, problem drug use and prison. *Thorax* 2007 February 8; [Epub ahead of print].

**Background:** Tuberculosis control is founded on early case detection and complete treatment of disease. In the UK tuberculosis is concentrated in subgroups of the population in large urban centres. We sought to describe the impact of homelessness, imprisonment and problem drug use on tuberculosis control in London. **Methods** We conducted a cohort study of all tuberculosis patients in Greater London to determine the point prevalence of disease in different groups and examine risk factors for smear positivity, drug resistance, treatment adherence, loss to follow-up and use of directly observed therapy (DOT). **Results** Data were collected on 97% (1941/1995) of eligible patients. The overall prevalence of tuberculosis was 27 per 100,000. Extremely high prevalence of tuberculosis was seen in homeless people living on the streets or in hostels (788/100,000), problem drug users (354/100,000), and prisoners (208/100,000). On multivariate analysis problem drug use was associated with smear positive disease (OR 2.2,  $p<0.001$ ), being part of a known outbreak of drug resistant tuberculosis (OR 3.5,  $p=0.001$ ) and loss to follow-up (OR 2.7,  $p<0.001$ ). Imprisonment was associated with being part of the outbreak (OR 10.3,  $p<0.001$ ) and poor adherence (OR 3.9,  $p<0.001$ ). Homelessness was associated with smear positive tuberculosis (OR 1.6,  $p=0.05$ ), multidrug resistance (OR 2.1,  $p=0.03$ ), poor adherence (OR 2.5,  $p<0.001$ ) and loss to follow-up (OR 3.8,  $p<0.001$ ). In London homeless people, prisoners and problem drug users collectively comprise 17% of TB cases, 44% of smear positive drug resistant cases, 38% of poorly adherent cases and 44% of cases lost to follow-up. 15% of these patients start treatment on DOT but 46% end up on DOT. **Conclusions** High levels of infectious and drug resistant disease, poor adherence and loss to follow up care indicate that tuberculosis is not effectively controlled among homeless people, prisoners and problem drug users in London.

#### **Topic F: Correctional Facilities**

34. Binswanger IA, Stern MF, Deyo RA et al. Release from prison--a high risk of death for former inmates. *N Engl J Med* 2007 January 11;356(2):157-65.

**BACKGROUND:** The U.S. population of former prison inmates is large and growing. The period immediately after release may be challenging for former inmates and may involve substantial health risks. We studied the risk of death among former inmates soon after their release from Washington State prisons. **METHODS:** We conducted a retrospective cohort study of all inmates released from the Washington State Department of Corrections from July 1999 through December 2003. Prison records were linked to the National Death Index. Data for comparison with Washington State residents were obtained from the Wide-ranging OnLine Data for Epidemiologic Research system of the Centers for Disease Control and Prevention. Mortality rates among former inmates were compared with those among other state residents with the use of indirect standardization and adjustment for age, sex, and race. **RESULTS:** Of 30,237 released inmates, 443 died during a mean follow-up period of 1.9 years. The overall mortality rate was 777 deaths per 100,000 person-years. The adjusted risk of

death among former inmates was 3.5 times that among other state residents (95% confidence interval [CI], 3.2 to 3.8). During the first 2 weeks after release, the risk of death among former inmates was 12.7 (95% CI, 9.2 to 17.4) times that among other state residents, with a markedly elevated relative risk of death from drug overdose (129; 95% CI, 89 to 186). The leading causes of death among former inmates were drug overdose, cardiovascular disease, homicide, and suicide. CONCLUSIONS: Former prison inmates were at high risk for death after release from prison, particularly during the first 2 weeks. Interventions are necessary to reduce the risk of death after release from prison.

35. Butler T, Boonwaat L, Hailstone S et al. The 2004 Australian prison entrants' blood-borne virus and risk behaviour survey. *Aust N Z J Public Health* 2007 February;31(1):44-50.

OBJECTIVES: To assess the prevalence of blood-borne viruses and associated risk factors among prison entrants at seven Australian prisons across four States. DESIGN: Consecutive cross-sectional design. Voluntary confidential testing of all prison entrants for serological markers of human immunodeficiency virus (HIV), hepatitis C (HCV) and hepatitis B (HBV) over 14 consecutive days in May 2004. Demographic data and data related to risks for blood-borne virus transmission, such as sexual activity, body piercing, tattooing, and injecting drug use, were collected. RESULTS: National prevalence for HIV was 1%, hepatitis B core antibody 20%, and hepatitis C antibody 34%. Fifty-nine per cent of participants had a history of injecting drug use. Among injecting drug users, the prevalence of HIV was 1%, hepatitis C antibody 56%, and hepatitis B core antibody 27%. Forty-one per cent of those screened reported a previous incarceration. In the multivariate model, Queensland and Western Australian (WA) prison entrants were significantly less likely to test positive to HCV than those in New South Wales (NSW). Amphetamine was the most commonly injected drug in Queensland, Tasmania and WA. In NSW, heroin was the most common drug injected. In the multivariate analysis a history of injecting drug use, being aged 30 years or more, and a prior incarceration were positively associated with hepatitis C infection. For hepatitis B core antibody, age over 30 years and a history of injecting drug use were associated with an increased risk. CONCLUSIONS: The findings support the view that prisoner populations are vulnerable to blood-borne virus infection, particularly hepatitis B and C. Prisoner populations should be included in routine surveillance programs so as to provide a more representative picture of blood-borne virus epidemiology in Australia.

36. Gershon RR, Sherman M, Mitchell C et al. Prevalence and risk factors for bloodborne exposure and infection in correctional healthcare workers. *Infect Control Hosp Epidemiol* 2007 January;28(1):24-30.

OBJECTIVE: To determine the prevalence and risk factors for bloodborne exposure and infection in correctional healthcare workers (CHCWs). Design. Cross-sectional risk assessment study with a confidential questionnaire and serological testing performed during 1999-2000. SETTING: Correctional systems in 3 states. RESULTS: Among 310 participating CHCWs, the rate of percutaneous injury (PI) was 32 PIs per 100 person-years overall and 42 PIs per 100 person-years for CHCWs with clinical job duties.

Underreporting was common, with only 25 (49%) of 51 PIs formally reported to the administration. Independent risk factors for experiencing PI included being age 45 or older (adjusted odds ratio [aOR], 2.41 [95% confidence interval (CI), 1.31-4.46]) and having job duties that involved needle contact (aOR, 3.70 [95% CI, 1.28-10.63]) or blood contact (aOR, 5.05 [95% CI, 1.45-17.54]). Overall, 222 CHCWs (72%) reported having received a primary hepatitis B vaccination series; of these, 150 (68%) tested positive for anti-hepatitis B surface antigen, with negative results significantly associated with receipt of last dose more than 5 years previously. Serologic markers of hepatitis B virus infection were identified in 31 individuals (10%), and the prevalence of hepatitis C virus infection was 2% (n=7). The high hepatitis B vaccination rate limited the ability to identify risk factors for infection, but hepatitis C virus infection correlated with community risk factors only. CONCLUSION: Although the wide coverage with hepatitis B vaccination and the decreasing rate of hepatitis C virus infection in the general population are encouraging, the high rate of exposure in CHCWs and the lack of exposure documentation are concerns. Continued efforts to develop interventions to reduce exposures and encourage reporting should be implemented and evaluated in correctional healthcare settings. These interventions should address infection control barriers unique to the correctional setting.

37. Dolan K, Kite B, Black E, Aceijas C, Stimson GV. HIV in prison in low-income and middle-income countries. *Lancet Infect Dis* 2007 January;7(1):32-41.

High prevalence of HIV infection and the over-representation of injecting drug users (IDUs) in prisons combined with HIV risk behaviour create a crucial public-health issue for correctional institutions and, at a broader level, the communities in which they are situated. However, data relevant to this problem are limited and difficult to access. We reviewed imprisonment, HIV prevalence, and the proportion of prisoners who are IDUs in 152 low-income and middle-income countries. Information on imprisonment was obtained for 142 countries. Imprisonment rates ranged from 23 per 100,000 population in Burkina Faso to 532 per 100,000 in Belarus and Russia. Information on HIV prevalence in prisons was found for 75 countries. Prevalence was greater than 10% in prisons in 20 countries. Eight countries reported prevalence of IDUs in prison of greater than 10%. HIV prevalence among IDU prisoners was reported in eight countries and was greater than 10% in seven of those. Evidence of HIV transmission in prison was found for seven low-income and middle-income countries. HIV is a serious problem for many countries, especially where injection drug use occurs. Because of the paucity of data available, the contribution of HIV within prison settings is difficult to determine in many low-income and middle-income countries. Systematic collection of data to inform HIV prevention strategies in prison is urgently needed. The introduction and evaluation of HIV prevention strategies in prisons are warranted.

38. Tedeschi SK, Bonney LE, Manalo R et al. Vaccination in juvenile correctional facilities: state practices, hepatitis B, and the impact on anticipated sexually transmitted infection vaccines. *Public Health Rep* 2007 January;122(1):44-8.

OBJECTIVES: Juvenile correctional facilities are an ideal setting to provide preventive vaccines to adolescents who are at risk. In many instances of incarceration, facilities

overcome the need for parental consent by making young people wards of the state and the state providing consent. The authors investigated current state practices for administering hepatitis B vaccine to incarcerated adolescents. These may impact the delivery of anticipated sexually transmitted infection (STI) vaccines to incarcerated adolescents. **METHODS:** From June to August 2004, interviews were conducted with state Immunization Program Managers by telephone about hepatitis B vaccination and consent policies in juvenile correctional facilities. **RESULTS:** Forty-five states were able to provide information about hepatitis B immunization in publicly funded juvenile correctional facilities. Forty-one of the 45 states offered hepatitis B vaccine to adolescents who were sentenced and thereby considered to be wards of the state. Of those 41 states, 20 also made hepatitis B vaccine easily accessible to detained adolescents (no parental consent required). Those 20 states considered detained adolescents as wards of the state (n=13), or allowed them to self-consent for the vaccine (n=7). **CONCLUSIONS:** Most states offer hepatitis B vaccination to sentenced adolescents in correctional facilities. Just over half of these states also vaccinate detained adolescents. Juvenile correctional facilities have experience administering vaccines, and this might allow for expansion of vaccination services when new STI vaccines become available. Still, there are major barriers to universal vaccination of incarcerated adolescents, including the issue of consent.

39. Zaller N, Thurmond P, Rich JD. Limited spending: an analysis of correctional expenditures on antiretrovirals for HIV-infected prisoners. *Public Health Rep* 2007 January;122(1):49-54.

**OBJECTIVE:** Correctional facilities provide a critical opportunity to treat and manage human immunodeficiency virus (HIV) and HIV-related complications among inmates. Inmates bear a higher HIV burden than the general population, and many have never received HIV care prior to incarceration. The standard of care in the community and in corrections for the treatment of HIV is highly active antiretroviral therapy (HAART). This study evaluated U.S. correctional expenditures for antiretrovirals (ARVs) and compared them to the estimated need for ARVs among HIV-infected prisoners in the U.S. to treat this population successfully. **METHODS:** The total number of HIV-infected prisoners in the United States was estimated using Bureau of Justice Statistics data. The National Sales Perspectives Audit, Combined Retail and Nonretail, July 1999 to December 2004 was used to estimate correctional ARV expenditures in 2004. Both measures were used to calculate treatment costs for ARV therapy. **RESULTS:** The analysis demonstrates that, in 2004, total ARV sales represented only 29% of the total necessary to treat all HAART eligible inmates with known HIV infection. **CONCLUSION:** There is a substantial unmet need for ARVs in correctional health care. Although many barriers exist to treating all eligible HIV-infected prisoners, treatment reduces costs associated with HIV-related complications and may encourage linkage to HIV care in the community. Treatment of all eligible HIV-infected inmates should be a public health priority.

40. Kim S, Ting A, Puisis M et al. Deaths in the cook county jail: 10-year report, 1995-2004. *J Urban Health* 2007 January;84(1):70-84.

The aims of this study were to describe causes of death during the 10-year period between 1995 and 2004 in a large urban jail in Chicago; to compare disease specific mortality rates between the jail population and the general population; to explore demographic and incarceration characteristics of the inmates who died in the jail by cause of death; and to examine gender difference in demographic characteristics, incarceration patterns, and causes of death. A total of 178 deaths occurring in the jail over a 10-year period (1995-2004) were reviewed. Age-adjusted disease-specific mortality rates were computed for the jail population and compared with the rates in the US general population. Cause of death, demographic variables, and incarceration related factors were retrieved from multiple computerized databases. Descriptive analyses were performed to examine demographic and incarceration-related patterns by cause of death and gender. Heart disease was the most frequent cause of death in the jail population, followed by cerebrovascular disease and suicide. Mortality rates for heart diseases, infectious/inflammatory conditions and suicide were higher for jail inmates than the general population. Black inmates accounted for the majority of deaths due to illnesses and homicide, and a much higher proportion of white and Hispanic inmates were involved in suicide deaths. Deaths due to drug overdose or withdrawal were disproportionately higher among female inmates compared with male inmates. Consistent review of mortality rates and causes of deaths in jail can be a useful tool to better understand health issues and needs of jail inmates. Surveillance of acute and chronic illnesses and strategic reengineering of jail health care is a key to quality improvement for incarcerated populations for whom the jail system becomes their primary care provider.