Urban Health Bulletin: A Compendium of Resources

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Introduction

Given the on-going challenges in **mapping** the communities that the urban poor inhabit, I was particularly interested in the first abstract under Analysis. Creative use of increasingly available remote-sensing data seems to hold much promise. I also was particularly interested in the operational research results on urban programming of **HIV/AIDS interventions** described in this issues short list of abstracts. Enjoy.

We welcome your comments and suggestions. If you are not already, please send your email address to receive future *Urban Health Bulletins*. If you have questions or comments about urban health issues, please contact:
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Urban Health Analysis	**Urban Environmental Health**	**HIV/AIDS**

Urban Health Analysis

Trop Med Int Health. 2008 Dec 11.

Feasibility of satellite image-based sampling for a health survey among urban townships of Lusaka, Zambia.

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Objectives: To describe our experience using satellite image-based sampling to conduct a health survey of children in an urban area of Lusaka, Zambia, as an approach to sampling when the population is poorly characterized by existing census data or maps.
Methods: Using a publicly available Quickbirdtrade mark image of several townships, we created digital records of structures within the residential urban study area using ArcGIS 9.2. Boundaries were drawn to create geographic subdivisions based on natural and man-made barriers (e.g. roads). Survey teams of biomedical research students and local community health workers followed a standard protocol to enrol children within the selected structure, or to move to the neighbouring structure if the selected structure was ineligible or refused enrolment. Spatial clustering was assessed using the K-difference function.
Results: Digital records of 16 105 structures within the study area were created. Of the 750 randomly selected structures, six (1%) were not found by the survey teams. A total of 1247 structures were assessed for eligibility, of which 691 eligible households were enroled. The majority of enroled households were the initially

selected structures (51%) or the first selected neighbour (42%). Households that refused enrolment tended to cluster more than those which enroled.

Conclusions: Sampling from a satellite image was feasible in this urban African setting. Satellite images may be useful for public health surveillance in populations with inaccurate census data or maps and allow for spatial analyses such as identification of clustering among refusing households.

Southeast Asian J Trop Med Public Health. 2008 Nov; 39(6):1110-25.

Health care preferences for children with typhoid fever in two slum communities in Karachi, Pakistan.

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This study examined health care preferences and influences in response to initial and persistent symptoms of typhoid fever among children in two slum communities in Karachi, Pakistan. Typhoid fever in this area is endemic and has a high rate of multi-drug resistantce. The study involved a household survey of 502 respondents. Private practitioners, including qualified medical specialists, were the preferred providers for initial symptoms, with government and private hospitals preferred for continuing symptoms. A number of cases continued to select initial health care choices regardless of the severity of symptoms. The findings point to factors of cost, access to care, previous use of a provider and perceived quality of care as key influences regarding health care choices. These findings suggest that cases of typhoid fever in these communities are at risk for not receiving appropriate diagnoses and treatment for children who are at risk for severe cases of multi-drug resistant disease. Suggestions are made for improving the care of children with typhoid in this context.

J Child Health Care. 2008 Dec; 12(4):314-28.

Child morbidity and care-seeking in Nairobi slum settlements: the role of environmental and socio-economic factors.

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The aim of this study was to investigate factors that influence morbidity patterns and health-seeking decisions in an urban slum community. Data were collected between May and August 2003 as part of the ongoing Nairobi urban demographic surveillance system and were analysed to identify factors that influence morbidity patterns and health-seeking decisions. The results show that the factors that influenced morbidity were the child's age, ethnicity and type of toilet facility. Predictors for seeking health care were the child's age, type and severity of illness, survival of father and mother, mother's education, mother's work status and wealth class. The conclusions drawn show that economic resources fall short in preventing child illnesses where children live in poor environmental conditions. However, by enhancing access to health care services, socio-economic status is critical for mitigating disease burden among children in slum settlements.

Prevalence and factors associated with intestinal parasitic infection among children in an urban slum of Karachi.

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BACKGROUND: Intestinal parasitic infections are endemic worldwide and have been described as constituting the greatest single worldwide cause of illness and disease. Poverty, illiteracy, poor hygiene, lack of access to potable water and hot and humid tropical climate are the factors associated with intestinal parasitic infections. The study aimed to estimate prevalence and identify factors associated with intestinal parasitic infections among 1 to 5 years old children residing in an urban slum of Karachi Pakistan.
METHODS AND PRINCIPAL FINDINGS: A cross sectional survey was conducted from February to June 2006 in Ghosia Colony Gulshan Town Karachi, Pakistan. A simple random sample of 350 children aged 1-5 years was collected. The study used structured pre-tested questionnaire, anthropometric tools and stool tests to obtain epidemiological and disease data. Data were analyzed using appropriate descriptive, univariate and multivariable logistic regression methods. The mean age of participants was 2.8 years and 53% were male. The proportions of wasted, stunted and underweight children were 10.4%, 58.9% and 32.7% respectively. The prevalence of Intestinal parasitic infections was estimated to be 52.8% (95% CI: 46.1; 59.4). Giardia lamblia was the most common parasite followed by Ascaris lumbricoides, Blastocystis hominis and Hymenolepis nana. About 43% children were infected with single parasite and 10% with multiple parasites. Age {Adjusted Odds Ratio (aOR) = 1.5; 95% CI: 1.1; 1.9}, living in rented households (aOR = 2.0; 95% CI: 1.0; 3.9) and history of excessive crying (aOR = 1.9; 95% CI: 1.0; 3.4) were significantly associated with intestinal parasitic infections.
CONCLUSIONS: Intestinal parasites are highly prevalent in this setting and poverty was implicated as an important risk factor for infection. Effective poverty reduction programmes and promotion of deworming could reduce intestinal parasite carriage. There is a need for mass scale campaigns to create awareness about health and hygiene.

Relationship of family income and house type to body mass index and chronic energy deficiency among urban Bengalee male slum dwellers of Kolkata, India.

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A cross-sectional study of 469 adult (>18 years) Bengalee male slum dwellers of Dum Dum, Kolkata, India, was undertaken to study the relationships of family income and house type with body mass index (BMI) and chronic energy deficiency. The overall frequency of chronic energy deficiency was 32.0%. Based on the World

Health Organization classification, the prevalence of chronic energy deficiency among this population was high and thus the situation is serious. Overall, monthly family income was significantly positively correlated with BMI. Significant differences in mean weight, BMI and monthly family income, were observed between the two house type groups. All values were found to be significantly higher in the brick household group who also earned a comparatively higher income as evident from the mean monthly family income values. The prevalence of chronic energy deficiency was also found to be significantly higher in the bamboo-fenced household group. Subjects belonging to the lowest family income group had the lowest mean BMI and the highest rate of chronic energy deficiency while those in the highest family income group had the largest mean BMI and lowest rate of chronic energy deficiency. There was a significant family income group difference in mean BMI. There existed significant differences in chronic energy deficiency rates in family income group categories. Linear regression analyses showed that monthly family income and house type had a significant impact on BMI. Subsequent multiple regression analyses revealed that both monthly family income and house type had a significant impact on BMI, even after controlling for each other.

Urban Environmental Health

Nutrition and public hygiene among children under five years of age in Mukuru slums of Makadara Division, Nairobi.

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OBJECTIVE: To determine the relationship between sanitation and malnutrition among children below five years.
DESIGN: A random sampling followed by an experimental design on microbiological analysis of food and water samples.
SETTING: Mukuru slums of Makadara division in Nairobi City.
SUBJECTS: Eighty food and thirty water samples from households within the study area were used.
RESULTS: Poor food and personal hygiene were observed within the households in the study area. Most of the respondents did not practice hygienic methods during food handling such as washing hands and vegetables before preparation. Food especially the leftovers was served at ambient temperatures. Sneezing and coughing over food during preparation were also a common practice which exposed consumers to contamination, Garbage disposal and proper drainage were also poor deepening on the sanitation problem. Microbiological analysis of water and food revealed that food and water quality were poor due to the high coliform counts and confirmed presence of Escherichia coli (E-coli) and Salmonella spp. Pathogens which are known causes of diarrhoea in children under five years of age.
CONCLUSION: Poor hygienic and unsanitary practices are major causes of diarrhoea, hence malnutrition in crowded Mukuru slums of Nairobi City.

Association of diarrheagenic Escherichia coli Pathotypes with infection and diarrhea among Mexican children and association of atypical Enteropathogenic E. coli with acute diarrhea.

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Seventy-six children < or =2 years old were prospectively followed for 1 year in a peri-urban community of Mexico City to determine asymptomatic infection and acute diarrhea associated with diarrheagenic Escherichia coli pathotypes (DEPs). By use of a pathogen-specific multiplex PCR, DEPs were sought in 795 stool samples, of which 125 (16%) were positive for DEP; of these, 4 represented shedding episodes and 4 parasite coinfections. Most single-DEP infections (85/117) were asymptomatic ($P < 0.001$), and of the 32 DEP diarrhea episodes, 41% were associated with atypical enteropathogenic E. coli (aEPEC), 37.5% with enterotoxigenic E. coli, 9% with typical EPEC, 9% with enteroinvasive E. coli, and 3% with Shiga toxin-producing E. coli strains. Among the 76 children, 54 had at least one stool positive for DEP, of which 23 experienced a DEP-associated diarrhea episode. In the last group of children, DEP infection was significantly associated with a diarrhea episode (relative risk [RR] = 2.5; 95% confidence interval [CI], 1.79 to 3.57; $P < 0.001$), with ETEC (RR = 2.30; 95% CI, 1.49 to 3.54; $P = 0.003$) and aEPEC (RR = 1.92; 95% CI, 1.23 to 3.0; $P = 0.019$) being the pathotypes associated with diarrhea. aEPEC-associated diarrhea episodes were frequently in the <12-month age group (RR = 2.57; 95% CI, 1.05 to 6.27; $P = 0.04$). aEPEC infections were distributed all year round, but associated diarrheal episodes were identified from April to October, with a May-June peak (rainy season). Most ETEC infections and diarrhea episodes characteristically occurred during the summer (rainy season), with a diarrhea peak in August. Of all DEPs, only aEPEC was associated with acute diarrhea episodes lasting 7 to 12 days ($P = 0.019$). DEPs are important causes of community-acquired enteric infection and diarrhea in Mexican children.

Human brucellosis in urban and peri-urban areas of Kampala, Uganda.

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A retrospective case-control study of human brucellosis in urban, peri-urban, and rural areas in Kampala, Uganda was undertaken to find the risks associated with the disease using the medical records of Mulago National Referral Hospital (Mulago Hospital). From the Brucella agglutination test (BAT) records between June 2004 and May 2006, 652 positive results were found. The case-control study showed that iving in urban areas was a risk factor for brucellosis. The numbers of improved and cross-

breed cattle per 1000 households were calculated on the basis of data obtained from interviews of 75 randomly selected local councils (LCIs) in an area between 5 and 20 km radii from the city center of Kampala. Cattle-keeping activities were, however, unpopular in urban areas compared to peri-urban and rural areas. Poor correlation between the distribution of human brucellosis cases and the distribution of cattle suggested that most of the brucellosis cases resulted from consumption of raw milk transported from peri-urban and rural areas of Kampala and/or dairy production areas outside Kampala.

HIV/AIDS

Soc Sci Med. 2008 Dec 12.

Vulnerability to HIV/AIDS among women of reproductive age in the slums of Delhi and Hyderabad, India.

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This report explores how vulnerability to HIV/AIDS applies to women in the reproductive age range living in the slum areas of Delhi and Hyderabad. The paper is based on a qualitative study of AIDS awareness levels conducted during the summer of 2006. It offers insightful narratives from a sample of 32 women, providing an in depth view of their vulnerability to HIV/AIDS due to their precarious socioeconomic conditions and low AIDS awareness. The women cited lack of education, low empowerment in expressing and accessing information related to sexual matters, and poverty as key factors to vulnerability.

AIDS Behav. 2008 Nov 8.

Effects of Micro-Enterprise Services on HIV Risk Behaviour Among Female Sex Workers in Kenya's Urban Slums.

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This study assessed individual-level effects of adding micro-enterprise services to a peer-mediated HIV/AIDS intervention among 227 female sex workers (FSWs) in Kenya. Survey data were collected in May-July 2003 and July-August 2005. Two-thirds of participants had operational businesses by end-line survey. Nearly half reported to have stopped sex work. Self-reported weekly mean number of all sexual partners changed from 3.26 (SD 2.45) at baseline to 1.84 (SD 2.15) at end-line survey (P < 0.001). Weekly mean number of casual partners did not change significantly. Weekly mean number of regular partners changed from 1.96 (SD 1.86) to 0.73 (SD 0.98) over the follow-up period (P < 0.001). Consistent condom use with regular partners increased by 18.5% and remained above 90% with casual partners. Micro-enterprise services may empower FSWs by giving them an alternative

livelihood when they wish to exit or reduce reliance on sex work. Determinants of successful business operation by FSWs deserve further research.

Sex Transm Dis. 2008 Dec 4.

Alcohol Abuse, Sexual Risk Behaviors, and Sexually Transmitted Infections in Women in Moshi Urban District, Northern Tanzania.

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BACKGROUND: To assess the covariates of alcohol abuse and the association between alcohol abuse, high-risk sexual behaviors and sexually transmitted infections (STIs).
METHODS: Two thousand and nineteen women aged 20 to 44 were randomly selected in a 2-stage sampling from the Moshi urban district of northern Tanzania. Participant's demographic and socio-economic characteristics, alcohol use, sexual behaviors, and STIs were assessed. Blood and urine samples were drawn for testing of human immunodeficiency virus, herpes simplex virus, syphilis, chlamydia, gonorrhea, trichomonas, and mycoplasma genitalium infections.
RESULTS: Adjusted analyses showed that a history of physical (OR = 2.05; 95% CI: 1.06-3.98) and sexual violence (OR = 1.63; 95% CI: 1.05-2.51) was associated with alcohol abuse. Moreover, alcohol abuse was associated with number of sexual partners (OR = 1.66; 95% CI: 1.01-2.73). Women who abused alcohol were more likely to report STIs symptoms (OR = 1.61; 95% CI: 1.08-2.40). Women who had multiple sexual partners were more likely to have an STI (OR = 2.41; 95% CI: 1.46-4.00) compared to women with 1 sexual partner. There was no direct association between alcohol abuse and prevalence of STIs (OR = 0.86; 95% CI: 0.55-1.34). However, alcohol abuse was indirectly associated with STIs through its association with multiple sexual partners.
CONCLUSIONS: The findings of alcohol abuse among physically and sexually violated women as well as the association between alcohol abuse and a history of symptoms of STIs and testing positive for STIs have significant public health implications. In sub-Saharan Africa, where women are disproportionately affected by the HIV epidemic screening for alcohol use should be part of comprehensive STIs and HIV prevention programs.