Urban Health Literature review

March and April, 2004

A. Social environment
B. Asthma
C. Globalization, urbanization
D. Healthcare in cities

General interest

1. **The Population Bulletin**: March 2004. The population reference bureau. Vol. 59, No.1. go to http://www.prb.org/Template.cfm?Section=Population_Bulletin1&template=/ContentManagement/ContentDisplay.cfm&ContentID=10110. This issue highlights world population trends tied to fertility and life expectancy in developed and less developed countries.

Topic A. Social Environment

2. Source: Health Serv Res. 2003 Dec;38(6 Pt 2):1645-717.

Title: **Measuring contextual characteristics for community health.**
Author: Hillemeier MM, Lynch J, Harper S, Casper M.
Institution: Department of Health Policy and Administration, The Pennsylvania State University, University Park 16802-6500, USA.

Abstract: To conceptualize and measure community contextual influences on population health and health disparities. DATA SOURCES: We use traditional and nontraditional secondary sources of data comprising a comprehensive array of community characteristics. STUDY DESIGN: Using a consultative process, we identify 12 overarching dimensions of contextual characteristics that may affect community health, as well as specific subcomponents relating to each dimension. DATA COLLECTION: An extensive geocoded library of data indicators relating to each dimension and subcomponent for metropolitan areas in the United States is assembled. PRINCIPAL FINDINGS: We describe the development of community contextual health profiles, present the rationale supporting each of the profile dimensions, and provide examples of relevant data sources. CONCLUSIONS: Our conceptual framework for community contextual characteristics, including a specified set of dimensions and components, can provide practical ways to monitor health-related aspects of the economic, social, and physical environments in which people live. We suggest several guiding principles useful for understanding how aspects of contextual characteristics can affect health and health disparities.

3. Source: J Aging Health. 2004 Feb;16(1):44-70.

Title: **Socioeconomic status and health among older adults in rural and urban China.**
Author: Zimmer Z, Kwong J.
InstitutionThe Population Council, One Dag Hammarskjold Plaza, New York, USA.

Abstract: The association between socioeconomic status (SES) and health, which has proven to be quite robust, is rarely tested in societies where levels of economic development and systems of stratification differ from those in Western developed countries. This article examines associations in rural and urban China. Method: Techniques include logit equation estimates of separate and pooled samples. The latter employ interaction terms to test rural and urban effects. Socioeconomic indicators include those more customarily used in these types of studies (e.g., education) and several that are less traditional (e.g., pension eligibility). Results: Results indicate associations exist in China. Bank savings is the strongest predictor. Some unexpected results are also found, including a positive association between socioeconomic status and

chronic conditions (e.g., cardiovascular disease) among older adults in urban China. Discussion: Use and access to a health care professional might explain part of this anomaly.

4. Source: Public Health Nutr. 2003 Sep;6(6):535-47.

Title: **Impact of the health and living conditions of migrant and non-migrant Senegalese adolescent girls on their nutritional status and growth.**
Author: Garnier D, Simondon KB, Hoarau T, Benefice E.
Institution : Epidemiologie et Prevention', Institut de recherche pour le developpement (IRD), BP 64501, 34394 Montpellier 5, France.

Abstract: To describe the living conditions of Senegalese adolescent girls according to their migration status, and to define the main socio-economic and biological determinants of their nutritional and growth status. DESIGN: Health and living conditions, sexual maturation, and nutritional and growth status of adolescent girls were determined within the framework of a longitudinal study on growth. SETTINGS: The capital city of Senegal (Dakar) and a rural community (Niakhar), 120 km south-east of Dakar. SUBJECTS: Three hundred and thirty-one girls, 14.5-16.6 years of age, were recruited from the same villages. Thirty-six per cent of the sample remained in the villages to attend school and/or to help with household subsistence tasks (non-migrants). The remaining (64%) migrated to cities to work as maids (migrants) and lived in two different socio-economic environments: at the home of a guardian during the night and in the house of the employer during the daytime. RESULTS: Family rural environment and guardian and employer urban environments were socio-economically different ($P < 0.001$). Living conditions in urban areas were better than in rural areas and the employer's environment was socio-economically more favourable. Migrants had more advanced sexual maturation and higher body mass index (BMI), fat mass index (FMI) and mid-upper arm circumference than non-migrants. However, migrants were smaller than non-migrants. BMI, FMI and weight-for-age were related to socio-economic levels and duration of migration. Schooling was positively related to height and negatively related to BMI. CONCLUSIONS: Migrants enjoyed better living conditions than non-migrants. This could be partly due to the better socio-economic environment of the employer. It was associated with earlier puberty and better nutritional status, but not with a better growth.

5. Source: Health Soc Care Community. 2003 Jul;11(4):299-313.

Title: **Urban deprivation and public hospital admissions in Christchurch, New Zealand, 1990-1997.**
Author: Barnett R, Lauer G.
Institution: Department of Geography, University of Canterbury, Christchurch, New Zealand

Abstract: The present paper examines the relationship between deprivation and changing patterns of public hospital admissions in Christchurch, New Zealand, between 1992 and 1997, during a time of economic restructuring and rapid change in the health sector. The total set of admissions into Christchurch Hospital was geocoded according to the meshblock domicile of each patient. Domiciles were classified into 10 decile categories using the NZDep91 and NZDep96 measures of deprivation. Regression analysis was used to measure changes in the relationship between deprivation and different types of admissions. Differences between admission rates for people living in the most and least deprived areas increased over time, especially following the implementation of the 1993 health reforms. This was most marked for younger adults (ages = 25-44 years), day patients, and especially, acute day patients, ambulatory-care-sensitive admissions and re-admissions. The average length of stay also varied by deprivation and appeared to be an important cause of the increasingly high rate of re-admissions. On average, patients from more affluent areas are hospitalised longer than low-income patients, although the differences narrow over time. The results suggest that the widening social gap in hospitalisation rates is a result of the effects of poverty and problems of access to primary care. However, more research on different admission pathways and causes of admissions for different patients from different parts of the city is needed to confirm these observations.

6. Source: AJS. 2003 Mar;108(5):976-1017.

Title: **Neighborhood mechanisms and the spatial dynamics of birth weight.**
Author: Morenoff JD.
Institution: University of Michigan.

This study addresses two questions about why neighborhood contexts matter for individuals via a multilevel, spatial analysis of birthweight for 101,662 live births within 342 Chicago neighborhoods. First, what are the mechanisms through which neighborhood structural composition is related to health? The results show that mechanisms related to stress and adaptation (violent crime, reciprocal exchange and participation in local voluntary associations) are the most robust neighborhood-level predictors of birth weight. Second, are contextual influences on health limited to the immediate neighborhood or do they extend to a wider geographic context? The results show that contextual effects on birth weight extend to the social environment beyond the immediate neighborhood, even after adjusting for potentially confounding covariates. These findings suggest that the theoretical understanding and empirical estimation of 'neighborhood effects' on health are bolstered by collecting data on more causally proximate social processes and by taking into account spatial interdependencies among neighborhoods.

7. Source: Soc Sci Med. 2003 Nov;57(9):1631-41.

Title: **Why is poverty unhealthy? Social and physical mediators.**
Author: Cohen DA, Farley TA, Mason K.
Institution: RAND Corporation, 1700 Main Street, Santa Monica, CA 2138, USA.

Socioeconomic status is associated with mortality, yet does not fully explain health disparities. This study analyzed data from the Project on Human Development in Chicago Neighborhoods (PHDCN), in the USA, to identify neighborhood-level factors associated with premature mortality. 1990 US Census data and mortality data from Chicago were merged with data from PHDCN, a study of 8782 residents in 343 Chicago neighborhoods. We performed a multivariate analysis to determine the association between premature mortality and concentrated disadvantage, residential stability, immigrant concentration, "collective efficacy" (a measure of willingness to help out for the common good), and "broken windows" (boarded up stores and homes, litter, and graffiti). Both collective efficacy and broken windows appeared to mediate the effect of concentrated disadvantage on all-cause premature mortality and mortality from cardiovascular disease and homicide, but there was also an interaction between broken windows and collective efficacy. Non-income characteristics associated with poverty should be further investigated. Interventions to determine whether these factors are causally related to health are needed.

Topic B. Asthma

8. Source: Ann Allergy Asthma Immunol. 2003 Nov; 91(5):455-9.

Title: **Association of recurrent wheezing with sensitivity to cockroach allergen in inner-city children.**
Author: De Vera MJ, Drapkin S, Moy JN.
Institution: Section of Allergy/Immunology, Rush-Presbyterian-St. Luke's Medical Center and Cook County Hospital, Chicago, Illinois 60612, USA.

Abstract: BACKGROUND: There are numerous data that show a strong relationship between early exposure and sensitization to indoor allergens and the development of asthma and persistent wheezing in children. Most studies, however, have only examined the prevalence of allergy in children who have been identified as having asthma. OBJECTIVE: To assess the prevalence of positive skin test results to common inhaled allergens and possible association with wheezing in inner-city children being seen in a general pediatric clinic. METHODS: Skin testing to common aeroallergens was performed by the prick-puncture method. Demographic and clinical data were collected. RESULTS: Seventy-five children aged 2 months to 10 years were evaluated. A total of 37% of the children had a positive skin test result to at least one allergen; 29% of the children were sensitive to dust mite, 15% to cockroach, 9% to cat, 7% to mold, 4% to grass, 3% to ragweed, and 1% to dog. Seven (64%) of 11 children with positive skin test results to

cockroach had a history of wheezing compared with 21 (33%) of 64 with negative skin test results to cockroach (P = .05). CONCLUSIONS: Our results indicate that in a population of inner-city children not previously identified as atopic, more than a third showed sensitivity to at least one allergen. Although dust mite was the most common allergen to which the children were sensitized, cockroach sensitivity was the only allergen that correlated significantly with previous episodes of wheezing.

9. Source: J Epidemiol Community Health. 2004 Jan;58(1):18-23.

Title: **Traffic related air pollution and incidence of childhood asthma: results of the Vesta case-control study.**
Author: Zmirou D, Gauvin S, Pin I, Momas I, Sahraoui F, Just J, Le Moullec Y, Bremont F, Cassadou S, Reungoat P, Albertini M, Lauvergne N, Chiron M, Labbe A,
Institution: Public Health Laboratory, School of Medicine, Nancy University, France.

Abstract: STUDY OBJECTIVE: The Vesta project aims to assess the role of traffic related air pollution in the occurrence of childhood asthma. DESIGN AND SETTING: Case-control study conducted in five French metropolitan areas between 1998 and 2000. A set of 217 pairs of matched 4 to 14 years old cases and controls were investigated. An index of lifelong exposure to traffic exhausts was constructed, using retrospective information on traffic density close to all home and school addresses since birth; this index was also calculated for the 0-3 years age period to investigate the effect of early exposures. MAIN RESULTS: Adjusted on environmental tobacco smoke, personal and parental allergy, and several confounders, lifelong exposure was not associated with asthma. In contrast, associations before age of 3 were significant: odds ratios for tertiles 2 and 3 of the exposure index, relative to tertile 1, exhibited a positive trend (1.48 (95%CI = 0.7 to 3.0) and 2.28 (1.1 to 4.6)), with greater odds ratios among subjects with positive skin prick tests. CONCLUSIONS: These results suggest that traffic related pollutants might have contributed to the asthma epidemic that has taken place during the past decades among children.

10. Source: J Allergy Clin Immunol. 2004 Mar;113(3):420-426.

Title: **Clinical deterioration in pediatric asthmatic patients after September 11, 2001.**
Instituion: Szema AM, Khedkar M, Maloney PF, Takach PA, Nickels MS, Patel H, Modugno F, Tso AY, Lin DH.

Abstract: New York City residents were exposed to a variety of inhaled substances after the collapse of the World Trade Center. Exposure to these substances might lead to an increase in asthma severity, with residential distance from Ground Zero predictive of the degree of change. OBJECTIVE: We sought to assess the effect of the World Trade Center collapse on local pediatric asthmatic patients. METHODS: We retrospectively reviewed the charts of 205 pediatric patients with established asthma from a clinic in lower Manhattan's Chinatown. Clinical data were obtained for the year before and the year after September 11, 2001. Measurements included numbers of visits, asthma medication prescriptions, oral corticosteroid prescriptions, weekly doses of rescue inhaler, and peak expiratory flow rates. Residential zip codes were used to compare the asthma severity of patients living within and beyond a 5-mile radius of Ground Zero. RESULTS: After September 11, 2001, these children had more asthma-related clinic visits (P =.002) and received more prescriptions for asthma medications (P =.018). No significant differences in oral steroid or rescue inhaler use were noted. Those living within 5 miles had more clinic visits after September 11, 2001 (P =.013); the increase in clinic visits for patients living more than 5 miles from Ground Zero was not significant. Mean percent predicted peak expiratory flow rates decreased solely for those patients living within 5 miles of Ground Zero during the 3 months after September 11, 2001. CONCLUSIONS: Asthma severity worsened after September 11, 2001, in pediatric asthmatic patients living near Ground Zero. Residential proximity to Ground Zero was predictive of the degree of decrease in asthma health.

Topic C. Globalization, urbanization

11. Source: Annu Rev Public Health. 2004;25:327-39.

Title: **The current state of public health in China.**
Author: Lee L.
Institution: Chinese Center for Disease Control and Prevention, Beijing 100050, China;, School of Public Health, Peking University Health Science Center, Beijing 100083, China

Abstract: In the past 50 years, China has made great achievements in controlling infectious diseases and improving the public's health and hygiene. However, in the twenty-first century, owing to the negative effects brought on by aging of the population and the burdens of diseases, urbanization, industrialization, and globalization, Chinese public health officials are encountering greater difficulties than ever. Old operating models of public health cannot meet present requirements. The main problems are poor capacity to respond to public health emergencies, severe inequality of health care services, and lagging development of public health information systems. Public health in China can gradually meet the requirements of social development and the increasing public demand for health care services only when the public heath is directed by informatization, globalization, technification, and humanization.

12. Source: Int J Hyg Environ Health. 2003 Aug;206(4-5):269-78.

Title: **Global urbanization and impact on health.**
Authors: Moore M, Gould P, Keary BS.
Institution: Office of Global Health Affairs, U.S. Department of Health and Human Services, Rockville, Maryland 20857, USA.

Abstract: Nearly half the world's population now lives in urban settlements. Cities offer the lure of better employment, education, health care, and culture; and they contribute disproportionately to national economies. However, rapid and often unplanned urban growth is often associated with poverty, environmental degradation and population demands that outstrip service capacity. These conditions place human health at risk. Reliable urban health statistics are largely unavailable throughout the world. Disaggregated intra-urban health data, i.e., for different areas within a city, are even more rare. Data that are available indicate a range of urban health hazards and associated health risks: substandard housing, crowding, air pollution, insufficient or contaminated drinking water, inadequate sanitation and solid waste disposal services, vector-borne diseases, industrial waste, increased motor vehicle traffic, stress associated with poverty and unemployment, among others. Local and national governments and multilateral organizations are all grappling with the challenges of urbanization. Urban health risks and concerns involve many different sectors, including health, environment, housing, energy, transportation, urban planning, and others. Two main policy implications are highlighted: the need for systematic and useful urban health statistics on a disaggregated, i.e., intra-urban, basis, and the need for more effective partnering across sectors. The humanitarian and economic imperative to create livable and sustainable cities must drive us to seek and successfully overcome challenges and capitalize on opportunities. Good urban planning and governance, exchange of best practice models and the determination and leadership of stakeholders across disciplines, sectors, communities and countries will be critical elements of success.

13. Source: Philos Trans R Soc Lond B Biol Sci. 2003 Dec 29;358(1440):1985-96.

Title: **Dimensions and approaches for Third World city water security.**
Author: Lundqvist J, Appasamy P, Nelliyat P.
Institution: Department of Water and Environmental Studies, Linkoping University, S-581 83 Linkoping, Sweden.

Abstract: A rapid expansion of urban systems, particularly in less-developed countries, pose considerable challenges. Urbanization also provides opportunities for socio-economic progress. Relative contribution from the urban sector to national economic growth is very high. The fate and the role of the socio-economic system in local, regional and national development hinges on many circumstances. Apart from delicate

social issues, deficiencies in water provision, internal distribution and a hazardous water and environmental quality represent basic and tangible daily problems. Urban water security requires fresh thinking at two levels. Some kind of basin authority (corresponding to a county council, i.e. a formal administrative and regulatory body for the geographical area within a river basin) in combination with a national water policy is required, notably in countries that contemplate, or are in the process of implementing, regional and sometimes inter-basin schemes to augment supply to growing conglomerations. Similarly, the generation of large volumes of waste water and the associated threat to downstream areas cannot be effectively tackled through conventional urban planning. Within the urban area, and particularly in non-regulated parts, there is an urgent need for institutional arrangements that facilitate operations for providers who have the capacity and ability to function under the prevailing circumstances. Introduction of effective production and treatment technologies are other necessary and urgent prerequisites to reach urban water security in Third World cities.

Topic D. Healthcare in cities

14. Source: J Health Popul Nutr. 2003 Sep;21(3):223-34.

Title: **Healthcare-financing reforms in transitional society: a Shanghai experience.**
Author: Dong W.
Institution: Canadian Institutes of Health Research, University of Toronto, Centre for Health Promotion, Toronto, M5G, 1L5 Ontario, Canada.

Abstract: Since the 1950s, China has had a very wide coverage of healthcare service at the local level. In urban areas, the employment-based healthcare-insurance schemes (Government Insurance Scheme and Labour Insurance Scheme) worked hand in hand with the full employment policy of the Government, which guaranteed basic care for almost every urban resident. However, since the economic reforms of the early 1980s, China's healthcare system has met great challenges. Some came from the reform of the labour system, and other challenges came from the introduction of market forces in the healthcare sector. The new policy of the Chinese Government on the Urban Employees' Basic Health Care Insurance is to introduce a cost-sharing plan in urban China. Like other major social policy changes, this new health policy also has a great impact on the lives of the Chinese people. Affordability has been the major concern among urban residents. Shanghai implemented the cost-sharing healthcare policy in the spring of 2001. It may be too early to assess the pros and cons of the new policy, but evidence shows that the employment-based health-insurance scheme excludes those at high risk and in most need. It is argued that the cost-sharing healthcare system will limit access by some people, especially those who are most vulnerable to the consequences of ill health and those in low-income groups, unless the deductibles vary according to income and unless low-income groups are exempt from paying premiums and deductibles.

15. Source: Am J Public Health. 2003 Oct;93(10):1699-705.

Title: **Tailored interventions to increase influenza vaccination in neighborhood health centers serving the disadvantaged.**
Author: Zimmerman RK, Nowalk MP, Raymund M, Tabbarah M, Hall DG, Wahrenberger JT, Wilson SA, Ricci EM.
Institution: Department of Family Medicine and Clinical Epidemiology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261, USA.

Abstract: We designed and evaluated interventions to increase adult immunizations within inner-city health centers. METHODS: Interventions included reminders, standing orders, and walk-in "flu shot clinics." Patients were surveyed and records evaluated. RESULTS: Records from 1 center showed that immunization rates increased from 24% to 30% (P <.001) for patients aged 50 to 64 years and from 45% to 53% for patients aged 65 years and older (P <.001). Self-reported vaccination rates did not increase. In logistic regression analyses, the strongest predictor of vaccination among patients aged 50 to 64 years was the belief that unvaccinated persons will contract influenza (odds ratio [OR] = 5.4; 95% confidence interval

[CI] = 2.4, 12.0). Among patients aged 65 years and older, the strongest predictor of vaccination was the belief that friends/relatives thought that they should be vaccinated (OR = 9.7; 95% CI = 4.2, 22.3). CONCLUSIONS: Tailored interventions can improve immunization rates at inner-city health centers.