



Urban Health Literature Review

March 2005

This review contains abstracts on work related to urban health published January - March 2005.

- Topic A. Theoretical and methodological frameworks on urban health**
- Topic B. Impact of social, physical and built environments on urban health**
- Topic C. Exploratory analyses on the relationship between urban living and health**
- Topic D. Public health history: lessons for urban health**

Topic A.

1. Source: Soc Sci Med. 2005 Jan;60(1):71-86.

Title: **Neighbourhood life and social capital: the implications for health.**

Author: **Ziersch AM, Baum FE, Macdougall C, Putland C.**

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Social capital has been linked to health outcomes, though there are some inconsistencies in the research and the link is dependent on the measures of social capital and health used. In this paper, we argue that social capital is multifaceted and its relationship with health is complex. We explore the relationship between a number of elements of neighbourhood life and neighbourhood-based social capital, and health, using both qualitative and quantitative methods. The paper reports on a study of the Western suburbs of Adelaide and the analysis of 2400 questionnaires and 40 in-depth interviews. A partial least-square path analysis was undertaken with the questionnaire data.

It considered the impact of perceptions of the physical environment, neighbourhood connections, neighbourhood trust, reciprocity, perceived safety and local civic action, and a number of demographic variables, on physical and mental health as measured by the SF-12. Of the neighbourhood-related variables, only perceived neighbourhood safety was related to physical health, with neighbourhood safety and neighbourhood connections related to mental health. Of the demographic variables, higher-income level and educational achievement were related to better physical and mental health. In addition, physical health was lower and mental health higher within older age groups. The inter-relationships between the neighbourhood variables and demographic differences in experience of neighbourhood were also examined. The thematic analysis of the interviews linked a number of social aspects of neighbourhood, the physical neighbourhood environment, perceptions of safety, civic activities and availability of local services, to health outcomes. The paper concludes that there is a need for more complex measures of social capital and that socio-economic factors are of relatively greater importance in determining health.

2. Source: J Community Health. 2005 Feb;30(1):1-11.

Title: **Beyond urban penalty and urban sprawl: back to living conditions as the focus of urban health.**

Author: **Freudenberg N, Galea S, Vlahov D.**

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Researchers have long studied urban health, both to describe the consequences of urban living and to design interventions to promote the health of people living in cities. Two approaches to understanding the impact of cities on health have been dominant, namely, urban health penalty and urban sprawl. The urban penalty approach posits that cities concentrate poor people and expose them to unhealthy physical and social environments. Urban sprawl focuses on the adverse health and environmental effects of urban growth into outlying areas. We propose a model that integrates these approaches and emphasizes urban living conditions as the primary determinant of health. The aim of the model is to

move beyond describing the health-related characteristics of various urban populations toward identifying opportunities for intervention. Such a shift in framework enables meaningful comparisons that can inform public health activities at the appropriate level and evaluate their effectiveness in improving the health of urban populations. The model is illustrated with two examples from current urban public health practice.

3. Source: Soc Sci Med. 2005 Mar;60(5):1017-33.

Title: **Cities and population health.**

Author: **Galea S, Freudenberg N, Vlahov D.**

Affiliation: Center for Urban Epidemiologic Studies, New York Academy of Medicine, 1216 Fifth Avenue, NY 10029, USA. sgalea@nyam.org

A majority of the world's population will live in urban areas by 2007 and cities are exerting growing influence on the health of both urban and non-urban residents. Although there long has been substantial interest in the associations between city living and health, relatively little work has tried to understand how and why cities affect population health. This reflects both the number and complexity of determinants and of the absence of a unified framework that integrates the multiple factors that influence the health of urban populations. This paper presents a conceptual framework for studying how urban living affects population health. The framework rests on the assumption that urban populations are defined by size, density, diversity, and complexity, and that health in urban populations is a function of living conditions that are in turn shaped by municipal determinants and global and national trends. The framework builds on previous urban health research and incorporates multiple determinants at different levels. It is intended to serve as a model to guide public health research and intervention.

4. Source: Lancet. 2005 Mar 2;365(9462):901-3.

Title: The **21st century health challenge of slums and cities.**

Author: **Sclar ED, Garau P, Carolini G.**

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No abstract available.

Topic B. Impact of social, physical and built environments on urban health

5. Source: Environ Health Perspect. 2005 Mar;113(3):a202.

Title: **A discussion of "urban sprawl and public health: designing, planning, and building for healthy communities"**

Author: **Olden K.**

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Urban Sprawl and Public Health, a timely publication by highly qualified authors, is another wake-up call about public policy decisions with respect to land use, transportation, and community design that adversely affect our health, civic involvement, and quality of life. Its thesis is that the designs of buildings and communities inhibit physical activity and social interactions and promote sedentary lifestyles and environmental pollution or degradation. The authors provide solution-oriented information to professionals, public officials, business and community leaders, and others who are concerned about protecting the environment and human health. They describe sprawl as the way land is used, the way people travel, and the way cities expand over large geographic areas. Such expansion increases distance between places of interest, makes walking and biking impractical, and increases reliance on automobiles for transportation. Although sprawl appears chaotic, the authors point out that it is well orchestrated and supported by public policy through cheap land, favorable tax codes, zoning regulations, lending practices, and the revolution in transportation. The latter made it

possible for large numbers of people to live longer distances from work and commercial centers. But now that the forces that spun sprawl (e.g., concerns about sanitation, infectious diseases, noise, crime, industrial pollution, and exposed sewage) no longer represent a nuisance or a threat to safety, it is time to rethink public policies designed to encourage or support migration from urban centers.

6. Source: Soc Sci Med. 2005 Jan;60(1):61-9.

Title: **Geographies of inequality: child pedestrian injury and walking school buses in Auckland, New Zealand.**

Author: **Collins DC, Kearns RA.**

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In the face of mounting concern at traffic congestion in the vicinity of schools and the associated risks of child pedestrian injury, the 'walking school bus' (WSB) idea has been rapidly adopted within metropolitan Auckland. WSBs involve volunteers guiding children to and from school in an orderly manner following established walking routes. This paper reports on a survey of the 34 Auckland primary schools which had adopted the scheme by November 2002. Despite rates of child pedestrian injury being highest in areas of socio-economic deprivation, our survey found WSB developments highly concentrated in low deprivation neighbourhoods. The inequitable socio-spatial distribution of WSBs in Auckland suggests that the ability to respond to road safety issues is closely correlated with socio-economic privilege. While our respondents identified a number of individual and community health benefits accruing from WSBs, we conclude that the initiative has a limited ability to address public health challenges originating within an inequitable and car-dominated urban political system.

7. Source: Am J Prev Med. 2005 Feb;28(2 Suppl 2):134-40.

Title: **Evaluation of the California Safe Routes to School legislation: urban form changes and children's active transportation to school**

Author: **Boarnet MG, Anderson CL, Day K, McMillan T, Alfonso M.**

Affiliation: Department of Planning, Policy, and Design, University of California-Irvine, Irvine, CA 92697-7075, USA. mgboarne@uci.edu

BACKGROUND: Walking or bicycling to school could contribute to children's daily physical activity, but physical environment changes are often needed to improve the safety and convenience of walking and cycling routes. The California Safe Routes to School (SR2S) legislation provided competitive funds for construction projects such as sidewalks, traffic lights, pedestrian crossing improvements, and bicycle paths. **METHODS:** A cross-sectional evaluation examined the relationship between urban form changes and walking and bicycle travel to school. Surveys were distributed to parents of third- through fifth-grade children at ten schools that had a completed SR2S project nearby. Two groups were created based on whether parents stated that their children would pass the SR2S project on the way to school or not. **RESULTS:** Children who passed completed SR2S projects were more likely to show increases in walking or bicycle travel than were children who would not pass by projects (15% vs 4%), based on parents' responses. **CONCLUSIONS:** Results support the effectiveness of SR2S construction projects in increasing walking or bicycling to school for children who would pass these projects on their way to school.

8. Source: Am J Prev Med. 2005 Feb;28(2 Suppl 2):105-16.

Title: **Perceived and objective environmental measures and physical activity among urban adults.**

Author: **Hoehner CM, Brennan Ramirez LK, Elliott MB, Handy SL, Brownson RC.**

Affiliation: Prevention Research Center, Saint Louis University School of Public Health, St. Louis, MO 63104, USA. hoehnerc@slu.edu

BACKGROUND: Enhancing community environments to support walking and bicycling serves as a promising approach to increase population levels of physical activity. However, few studies have simultaneously assessed perceptions and objectively measured environmental factors and their relative association with transportation or recreational physical

activity. **METHODS:** For this cross-sectional study, high- and low-income study areas were selected among census tracts in St. Louis MO ("low-walkable" city) and Savannah GA ("high-walkable" city). Between February and June 2002, a telephone survey of 1068 adults provided measures of the perceived environment and physical activity behavior. In this timeframe, objective measures were collected through environmental audits of all street segments (n =1158). These measures were summarized using 400-m buffers surrounding each respondent. Neighborhood characteristics included the land use environment, transportation environment, recreational facilities, aesthetics, and social environment. Associations were examined between neighborhood features and transportation- and recreation-based activity. **RESULTS:** After adjusting for age, gender, and education, transportation activity was negatively associated with objective measures of sidewalk levelness and perceived and objective neighborhood aesthetics. It was positively associated with perceived and objectively measured number of destinations and public transit, perceived access to bike lanes, and objective counts of active people in the neighborhood. Recreational activity was positively associated with perceived access to recreational facilities and objective measures of attractive features. **CONCLUSIONS:** These findings indicate that physical activities for transportation or recreational are associated with different perceived and objective environmental characteristics. Modifications to these features may change the physical activity behavior of residents exposed to them.

9. Source: Am J Prev Med. 2005 Feb;28(2 Suppl 2):117-25.

Title: Linking objectively measured physical activity with objectively measured urban form: findings from SMARTRAQ

Author: Frank LD, Schmid TL, Sallis JF, Chapman J, Saelens BE.

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BACKGROUND: To date, nearly all research on physical activity and the built environment is based on self-reported physical activity and perceived assessment of the built environment. **OBJECTIVE:** To assess how objectively measured levels of physical activity are related with objectively measured aspects of the physical environment around each participant's home while controlling for sociodemographic covariates. **METHODS:** Objective measures of the built environment unique to each household's physical location were developed within a geographic information system to assess land-use mix, residential density, and street connectivity. These measures were then combined into a walkability index. Accelerometers were deployed over a 2-day period to capture objective levels of physical activity in 357 adults. **RESULTS:** Measures of land-use mix, residential density, and intersection density were positively related with number of minutes of moderate physical activity per day. A combined walkability index of these urban form factors was significant (p =0.002) and explained additional variation in the number of minutes of moderate activity per day over sociodemographic covariates. Thirty-seven percent of individuals in the highest walkability index quartile met the > or =30 minutes of physical activity recommended, compared to only 18% of individuals in the lowest walkability quartile. Individuals in the highest walkability quartile were 2.4 times more likely (confidence interval=1.18-4.88) than individuals in the lowest walkability quartile to meet the recommended > or =30 minutes of moderate physical activity per day. **CONCLUSIONS:** This research supports the hypothesis that community design is significantly associated with moderate levels of physical activity. These results support the rationale for the development of policy that promotes increased levels of land-use mix, street connectivity, and residential density as interventions that can have lasting public health benefits.

10. Source: Health Place. 2005 Jun;11(2):147-56.

Title: The urban built environment and overdose mortality in New York City neighborhoods.

Author: Hembree C, Galea S, Ahern J, Tracy M, Markham Piper T, Miller J, Vlahov D, Tardiff KJ.

Affiliation: Center for Urban Epidemiologic Studies, New York Academy of Medicine, 1216 Fifth Avenue, New York, NY 10029 5293, USA.

Accidental drug overdose continues to be a substantial cause of mortality for drug users. Characteristics of the neighborhood built environment may be important determinants of the likelihood of drug overdose mortality independent of individual-level factors. Using data from the New York City Office of the Chief Medical Examiner, we conducted a multilevel case control study using data on accidental overdose deaths as cases and non-overdose accidental deaths as controls. We used archival data from the New York City Housing and Vacancy Survey and the Mayor's Office of

Operations to assess characteristics of neighborhood external (e.g. dilapidation of buildings) and internal (e.g. quality of utilities in houses) built environment. Multilevel analyses were used to assess the relations between the neighborhood built environment and the likelihood of overdose death. Six out of the eight characteristics of the external environment studied and three out of the six characteristics of the internal environment studied were significantly associated with the likelihood of fatal drug overdose in multilevel models after adjusting for individual-level (age, race, sex) and neighborhood-level (income, drug use) variables. Deterioration of the built environment, particularly the external environment, is associated with an increased likelihood of fatal accidental drug overdose. Disinvestment in social resources, psychosocial stressors, neighborhood differences in response to a witnessed overdose, and differences in vulnerability to the adverse consequences of drug use in different neighborhoods may explain the observed associations.

11. Source: Int J Epidemiol. 2005 Feb 28; [Epub ahead of print]

Title: **Neighbourhood deprivation and alcohol consumption: does the availability of alcohol play a role?**

Author: **Pollack CE, Cubbin C, Ahn D, Winkleby M.**

Affiliation: Division of General Internal Medicine, San Francisco General Hospital, University of California, San Francisco, CA, USA.

BACKGROUND: Previous studies suggest that the physical availability of alcohol may mediate the association between neighbourhood-level material deprivation and alcohol consumption. This study tests the relationships between neighbourhood-level deprivation, alcohol availability, and individual-level alcohol consumption using a multilevel analysis. **METHODS:** Data are from cross-sectional surveys conducted between 1979 and 1990 as part of the Stanford Heart Disease Prevention Program (SHDPP). Women and men (n = 8197) living in four northern/central California cities and 82 neighbourhoods were linked to neighbourhood deprivation variables derived from the US census (e.g. unemployment, crowded housing) and to measures of alcohol availability (density of outlets in the respondent's neighbourhood, nearest distance to an outlet from the respondent's home, and number of outlets within a half mile radius of the respondent's home). Separate analyses were conducted for on- and off-sale outlets. **RESULTS:** The most deprived neighbourhoods had substantially higher levels of alcohol outlet density than the least deprived neighbourhoods (45.5% vs 14.8%, respectively). However, multilevel analyses showed that the least deprived neighbourhoods were associated with the heaviest alcohol consumption, even after adjusting for individual-level sociodemographic characteristics (OR 1.30, CI 1.08-1.56). Alcohol availability was not associated with heavy drinking and thus did not mediate the relationship between neighbourhood deprivation and heavy alcohol consumption. **CONCLUSIONS:** Although alcohol availability is concentrated in the most deprived neighbourhoods, women and men in least deprived neighbourhoods are most likely to be heavy drinkers. This mismatch between supply and demand may cause people in the most deprived neighbourhoods to disproportionately suffer the negative health consequences of living near alcohol outlets.

Topic C. Exploratory analyses on the relationship between urban living and health

12. Source: J Urban Health. 2005 Mar;82(1):10-20. Epub 2005 Feb 28.

Title: **Health and safety hazards associated with subways: a review.**

Author: **Gershon RR, Qureshi KA, Barrera MA, Erwin MJ, Goldsmith F.**

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Subway systems are key components in mass transportation networks worldwide, providing rapid and affordable transportation to urban communities in 58 different countries. The benefits afforded by subway transit are numerous and mainly derived from the reduction in automobile use, thereby limiting environmental and health hazards associated with exhaust-air emissions. Additionally, by limiting congestion and providing vital transportation links within a city, subways also improve the overall quality of life of urban communities. However, to best maximize the positive impact on the urban environment, subway systems need to provide a safe and healthy environment for both passengers and subway transit workers. Periodically, safety concerns are raised, most recently in relation to the vulnerability of subways to terrorist attacks. To examine this issue more carefully, we conducted a structured review of the literature to identify and characterize potential health and safety hazards associated with subways. A secondary goal was to identify various risk

management strategies designed to minimize the risk of these hazards. This information may be helpful to urban communities, urban planners, public health specialists, and others interested in subway safety

13. Source: Can J Public Health. 2005 Jan-Feb;96(1):55-9.

Title: **Opportunities for video lottery terminal gambling in Montreal: an environmental analysis.**

Author: **Gilliland JA, Ross NA.**

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BACKGROUND: In the province of Quebec, video lottery terminal (VLT) gambling has proliferated under government control since 1993. The aims of this study were to describe the spatial distribution of video lottery terminals (VLTs) in the municipalities of Montreal and Laval and to identify neighbourhood socio-economic conditions associated with their distribution. METHOD: Locations of all establishments holding VLT licences in Montreal and Laval (n = 834) were geocoded by their street address. Boroughs (n = 49) were characterized by socio-economic indicators (unemployment, educational attainment, lone parenthood), a neighbourhood distress index, and measures of VLT prevalence, VLT adoption and VLT density. RESULTS: VLT prevalence, adoption and density were strongly correlated ($p < 0.01$) with lower borough socio-economic conditions. Although liquor establishments were also more likely to be located in poorer neighbourhoods, the adoption rate of VLT licences by bars in poorer neighbourhoods was systematically higher than in more affluent ones. CONCLUSIONS: The spatial distribution of VLTs in Montreal and Laval closely reflects local geographies of socio-economic disadvantage. Any public health effort to reduce the burden of gambling-related health and social problems must recognize the spatial distortion of gambling opportunities in the urban environment.

14. Source: Nat Rev Microbiol. 2005 Jan;3(1):81-90.

Title: **Urbanization, malaria transmission and disease burden in Africa.**

Author: **Hay SI, Guerra CA, Tatem AJ, Atkinson PM, Snow RW.**

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Many attempts have been made to quantify Africa's malaria burden but none has addressed how urbanization will affect disease transmission and outcome, and therefore mortality and morbidity estimates. In 2003, 39% of Africa's 850 million people lived in urban settings; by 2030, 54% of Africans are expected to do so. We present the results of a series of entomological, parasitological and behavioural meta-analyses of studies that have investigated the effect of urbanization on malaria in Africa. We describe the effect of urbanization on both the impact of malaria transmission and the concomitant improvements in access to preventative and curative measures. Using these data, we have recalculated estimates of populations at risk of malaria and the resulting mortality. We find there were 1,068,505 malaria deaths in Africa in 2000 – a modest 6.7% reduction over previous iterations. The public-health implications of these findings and revised estimates are discussed.

15. Source: Sociol Health Illn. 2005 Jan;27(1):44-67.

Title: **Are inner-cities bad for your health? Comparisons of residents' and third parties' perceptions of the urban neighbourhood of Gospel Oak, London.**

Author: **Whitley R, Prince M.**

Affiliation: Department of Psychiatry, McGill University Montreal.

This paper analyses representations of the neighbourhood of Gospel Oak (London, UK), by contrasting views of residents with views expressed by third parties. Data from residents were gathered through in-depth qualitative methods. Data from third parties were gathered through documentary analysis. Third parties' descriptions of Gospel Oak were significantly more negative than residents'. In contrast, residents were overwhelmingly positive about the neighbourhood, often taking a diametrically opposed view to third parties on the same factor, for example, quality of housing. We argue that third parties' negative social construction of Gospel Oak is functional rather than descriptive; a pathological orientation is

usually taken to assist efforts to win regeneration funding. Though this is sometimes successful, we discuss possible negative affects of this social construction, for example, stigmatisation. Finally, we warn against making assumptions of collective social and physical pathology in urban neighbourhoods, urging a more critical approach to the study of the inner-city in the health sciences.

16. Source: *Tob Control*. 2005 Feb;14(1):60-3.

Title: **Environmental tobacco smoke exposure in public places of European cities.**

Author: **Nebot M, Lopez MJ, Gorini G, Neuberger M, Axelsson S, Pilali M, Fonseca C, Abdennbi K, Hackshaw A, Moshammer H, Laurent AM, Salles J, Georgouli M, Fondelli MC, Serrahima E, Centrich F, Hammond SK.**

Affiliation: Public Health Agency, Barcelona, Spain. mjlopez@aspb.es.

BACKGROUND: Exposure to environmental tobacco smoke (ETS) has important public health implications. The results of the first European multi-centre study that measured ETS exposure in a range of public places (transport, educational settings, and leisure facilities such as bars and restaurants) are presented. **METHOD:** Nicotine vapour phase was measured using ETS passive samplers containing a filter treated with sodium bisulfate. **RESULTS:** Bars and discos are the places with the highest concentrations of nicotine from ETS, median ranging from 19 to 122 mug/m³. Restaurants had the next highest values. Concentrations of nicotine generally range from 0.1-5 mug/m³ in airports, and from 0.5-10 mug/m³ in train stations. Nicotine was also found in schools and universities, yet schools tended to have the lowest concentrations compared to all the other public places sampled. In hospitals levels were generally below 5 mug/m³. **CONCLUSIONS:** Although there is some variability between cities, this study shows that tobacco smoke is present in most of the studied public places. The study also showed that in areas where smoking is prohibited, concentrations of nicotine are lower than in areas where smoking is allowed but they are not zero. The results of this study indicate that policies should be implemented that would effectively reduce levels of tobacco smoke in public areas.

17. Source: *Malar J*. 2005 Feb 18;4(1):12.

Title: **Malaria and urbanization in sub-Saharan Africa.**

Author: **Donnelly MJ, McCall P, Lengeler C, Bates I, D'Alessandro U, Barnish G, Konradsen F, Klinkenberg E, Townson H, Trape JF, Hastings IM, Mutero C.**

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There are already 40 cities in Africa with over 1 million inhabitants and the United Nations Environmental Programme estimates that by 2025 over 800 million people will live in urban areas. Recognizing that malaria control can improve the health of the vulnerable and remove a major obstacle to their economic development, the Malaria Knowledge Programme of the Liverpool School of Tropical Medicine and the Systemwide Initiative on Malaria and Agriculture convened a multi-sectoral technical consultation on urban malaria in Pretoria, South Africa from 2nd to 4th December, 2004. The aim of the meeting was to identify strategies for the assessment and control of urban malaria. This commentary reflects the discussions held during the meeting and aims to inform researchers and policy makers of the potential for containing and reversing the emerging problem of urban malaria.

18. Source: *Occup Environ Med*. 2005 Feb;62(2):86-94.

Title: **Health of children working in small urban industrial shops.**

Author: **Nuwayhid IA, Usta J, Makarem M, Khudr A, El-Zein A.**

Affiliation: Department of Environmental Health, Faculty of Health Sciences, American University of Beirut, Lebanon. nuwayhid@aub.edu.lb

AIMS: To explore associations between work status and multidimensional health indices in a sample of urban Lebanese children. **METHODS:** A cross-sectional survey was used to compare 78 male children (aged 10-17 years) working full time in small industrial shops, and a comparison group of 60 non-working male schoolchildren. All children lived and worked or studied in the poor neighbourhoods of three main Lebanese cities. **RESULTS:** Working children reported frequent abuses. They smoked and dated more than the comparison group. They also reported a higher number of

injuries (last 12 months) and recent skin, eye, and ear complaints (last two weeks). Physical examination revealed more changes in their skin and nails, but no differences in height or weight compared to non-working group. A higher blood lead concentration was detected among working children, but no differences in haemoglobin and ferritin. No differences were noted between the two groups of children regarding anxiety, hopelessness, and self-esteem. The drawings of the working children, however, revealed a higher tendency to place themselves outside home and a wider deficit in developmental age when compared to non-working children. **CONCLUSION:** Significant differences were found between working and non-working children with respect to physical and social health parameters, but differences were less with regard to mental health. Future research should focus on (1) more sensitive and early predictors of health effects, and (2) long term health effects. The generality of findings to other work settings in the developing world should also be tested.

19. Source: *J Expo Anal Environ Epidemiol*. 2005 Mar;15(2):185-204.

Title: **A review and evaluation of intraurban air pollution exposure models.**

Author: **Jerrett M, Arain A, Kanaroglou P, Beckerman B, Potoglou D, Sahuvaroglu T, Morrison J, Giovis C.**

Affiliation: Division of Biostatistics, Departments of Preventive Medicine and Geography, University of Southern California, 1540 Alcazar Street, CHP-220, Los Angeles, California, USA.

The development of models to assess air pollution exposures within cities for assignment to subjects in health studies has been identified as a priority area for future research. This paper reviews models for assessing intraurban exposure under six classes, including: (i) proximity-based assessments, (ii) statistical interpolation, (iii) land use regression models, (iv) line dispersion models, (v) integrated emission-meteorological models, and (vi) hybrid models combining personal or household exposure monitoring with one of the preceding methods. We enrich this review of the modelling procedures and results with applied examples from Hamilton, Canada. In addition, we qualitatively evaluate the models based on key criteria important to health effects assessment research. Hybrid models appear well suited to overcoming the problem of achieving population representative samples while understanding the role of exposure variation at the individual level. Remote sensing and activity-space analysis will complement refinements in pre-existing methods, and with expected advances, the field of exposure assessment may help to reduce scientific uncertainties that now impede policy intervention aimed at protecting public health.

20. Source: *Health Promot Int*. 2005 Mar;20(1):61-8. Epub 2005 Jan 24.

Title: **The spread of drug abuse in rapidly urbanizing communities in Vientiane, Lao People's Democratic Republic.**

Author: **Fujiwara T, Takano T, Nakamura K.**

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To determine the prevalence of drug abuse in city neighborhoods in a developing country undergoing rapid urbanization, we performed a household survey on the spread of drug abuse in Vientiane, Lao People's Democratic Republic. A total of 1497 households from 17 villages were selected by the stratified random sampling method from urban districts in the city of Vientiane. Participatory style research was employed to increase both the sensitivity of detection and the reliability of information gathered. Local key players shared in the participatory process in this study. We worked with national and city officers and community leaders, as well as with neighborhood leaders who had received previous training for this survey, and conducted household surveys using face-to-face interviews. We inquired about the spread of drug abuse by asking if the families interviewed recognized drug abuse problems in their community. To examine the extent of urbanization of individual villages, the urban index was calculated by principle component analysis from the following eight indicators: income, occupation, parents' educational histories, diffusion of telephones, ownership of livestock, diffusion of plumbing for running water and distance from the Vientiane city center to the village. Distance was calculated by the Geographic Information System. Among the 17 villages included in the study, the average percentage of recognition of drug abuse in the community was 63.2%. The relationship between recognition of cases of drug abuse in the community and the urban index showed a significant correlation, with a Spearman coefficient of 0.650 ($p < 0.01$). The high reliability of participatory style surveys is also discussed. In conclusion, city neighborhoods in a developing country undergoing rapid urbanization showed evidence of the spread of drug abuse, which was associated with the urban index. Participatory style research activity was recommended to help raise awareness of community participation in anti-drug-abuse activities.

21. Source: Atmospheric Environment 39(2): 283-295. January 2005.

Title: **Inhalation of motor vehicle emissions: effects of urban population and land area.**

Author: **JD Marshall, TE McKone, E Deakin, and WW Nazaroff.**

Results presented in this article indicate that increasing population density can reduce the people's inhalation intake of motor vehicle emissions, but that this is not necessarily the case. That is, exposure to vehicle emissions can represent an "urban penalty" or an "urban sprawl penalty", depending on how people's transportation patterns change in response to changing population density.

22. Source: Am J Respir Crit Care Med. 2005 Mar 11; [Epub ahead of print]

Title: **Air Pollution and Child Respiratory Health: a Case-crossover Study in Australia and New Zealand.**

Author: **Barnett AG, Williams GM, Schwartz J, Neller AH, Best TL, Petroeschevsky AL, Simpson RW.**

Affiliation: School of Population Health, University of Queensland, Herston, Queensland, Australia.

Rationale. The strength of the association between outdoor air pollution and hospital admissions in children has not yet been well defined. Objectives. To estimate the impact of outdoor air pollution on respiratory morbidity in children after controlling for the confounding effects of weather, season and other pollutants. Methods. The study used data on respiratory hospital admissions in children (three age groups: less than 1 year, 1-4 years, and 5-14 years) for five cities in Australia and two in New Zealand. Time-series of daily numbers of hospital admissions were analyzed using the case-crossover method; the results from cities were combined using a random effects meta-analysis. Measurements and Main Results. Significant increases across the cities were observed for hospital admissions in children for pneumonia and acute bronchitis (0, 1-4 years), respiratory disease (0, 1-4 years, 5-14 years) and asthma (5-14 years). These increases were found for particles (PM_{2.5}, PM₁₀, nephelometry), NO₂, and SO₂. The largest association found was a 6.0% increase in asthma admissions (5-14 years) in relation to a 5.1 ppb increase in 24-hour NO₂. Conclusions. This study found strong and consistent associations between outdoor air pollution and short-term increases in childhood hospital admissions. A number of different pollutants showed significant associations and these were distinct from any temperature (warm or cool) effects.

23. Source: Addict Behav. 2005 Mar;30(3):545-56.

Title: **Household survey on drug abuse in Brazil: Study involving the 107 major cities of the country-2001.**

Author; **Galduroz JC, Noto AR, Nappo SA, Carlini EA.**

Affiliation: Universidade Federal De Sao Paulo, Departamento De Psicobiologia, Brazil; Centro Brasileiro De Informacoes Sobre Drogas Psicotropicadas, Cebrid, Brazil.

The prevalence of the use in Brazil of illicit drugs, as well as of alcohol and tobacco, was determined. Further, illicit use of psychotropic medicines, and anabolic steroids were also surveyed. This study was carried out in 107 Brazilian cities with more than 200,000 inhabitants aged 12-65 years. The sampling design adopted was that of sampling per aggregates in three stages: first, the census sectors were selected; second, homes were selected among the sectors; finally, in each home, a respondent was selected in a manner independent of the interviewer. There were 8589 persons interviewed. The questionnaire utilized was that of the SAMHSA (Substance Abuse and Mental Health Services Administration) which was translated and adapted for Brazilian conditions. The lifetime use of alcohol in the 107 major cities of the country was 68.7%, which was close to numbers observed for Chile at 70.8% and the USA at 81.0%. Yet, tobacco lifetime use was 41.1% of the total, which is lower than the prevalence observed in the USA (70.5%). The data on the lifetime use of marijuana in Brazil (6.9%) approximated the findings for Colombia (5.4%), however, being much lower than that observed in the USA (34.2%) and the United Kingdom (25.0%). The prevalence of lifetime use of cocaine was 2.3%, well below the levels for the USA with 11.2% of the total population. The abuse of inhalants was 5.8% of the total, greater than that found in Colombia (1.4%) and about four times less than that in the United Kingdom with 20.0%. Among the medicaments, stimulants had a 1.5% prevalence of lifetime use, and that of benzodiazepines had similar percentages in Brazil (3.3%) and in the USA (5.8%). In this survey, only four individuals reported lifetime use of heroin, which was equivalent to about

0.04% of the sample and much lower than that in the USA with 1.2% and in Colombia reaching 1.5%. These findings will allow the implementation of public policies fitted to the situation with psychotropic drugs in Brazil.

24. Source: Am J Public Health. 2005 Jan;95(1):109-16.

Title: **Immigration status and health insurance coverage: who gains? Who loses?**

Author: **Prentice JC, Pebley AR, Sastry N.**

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OBJECTIVES: We compared health insurance status transitions of nonimmigrants and immigrants. METHODS: We used multivariate survival analysis to examine gaining and losing insurance by citizenship and legal status among adults with the Los Angeles Family and Neighborhood Survey. RESULTS: We found significant differences by citizenship and legal status in health insurance transitions. Undocumented immigrants were less likely to gain and more likely to lose insurance compared with native-born citizens. Legal residents were less likely to gain and were slightly more likely to lose insurance compared with native-born citizens. Naturalized citizens did not differ from native-born citizens. CONCLUSIONS: Previous studies have not examined health insurance transitions by citizenship and legal status. Policies to increase coverage should consider the experiences of different immigrant groups.

25. Source: Soc Sci Med. 2005 Jan;60(1):153-64.

Title: **A naturalistic inquiry on the impact of interventions aiming to improve health and the quality of life in the community.**

Author: **Sogoric S, Middleton J, Lang S, Ivankovic D, Kern J.**

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The goal of this study is to identify and describe variables contributing to the efficiency of health promotion interventions, and to assess whether these variables can serve as reliable and early indicators of the success of such interventions. The study sample includes 44 interventions selected through a network of key informants from five cities--Liverpool, Sandwell, Vienna, Pula, and Rijeka--by using a chain technique. Data on each intervention are collected through an in-depth interview with a program leader, the collection of project-related documents, and on-site observation. Qualitative analysis of data performed with content analysis and computer-assisted free-text analysis reveals different characteristics of interventions depending on whether they are initiated by the city government sector, health-care system, or citizens sector (independent of the city or country). The assessment of the efficiency of these three groups of interventions also differs because of varying features, scope (activity potentials) and impact they are able to accomplish. We have identified ways in which the efficiency of all three groups of interventions can be improved. The efficiency of the interventions within the city sector can be increased through an improved process of delegation to other sectors, higher involvement of user groups, and higher receptivity and organizational flexibility. The efficiency of the interventions within the citizens sector can be improved through professional, organizational, and financial support. Support from the professional community is important for citizens sector interventions in confirming the importance of the problem they address and legitimizing the actions they propose and undertake.

26. Source: J Rural Health. 2005 Winter;21(1):21-30.

Title: **Rural-urban differences in employment-related health insurance.**

Author: **Larson SL, Hill SC.**

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CONTEXT: Rural residents are disproportionately represented among the uninsured in the United States. PURPOSE: We compared nonelderly adult residents in 3 types of nonmetropolitan areas with metropolitan workers to evaluate which characteristics contribute to lack of employment-related insurance. RESEARCH DESIGN AND ANALYSIS: Data were

obtained from the Medical Expenditure Panel Survey, pooled across 3 panels (1996--1998) to enhance the rural sample size. Econometric decomposition was used to quantify the contribution of employment structure to differences in the probability of being offered employment-related health insurance. FINDINGS: The most rural workers are 10.4 percentage points less likely to be offered insurance compared with urban workers; the difference is smaller for residents of other rural areas. In rural counties not adjacent to urban areas, lower wages and smaller employers each account for about one-third of the total difference. CONCLUSIONS: Health insurance disparities associated with rural residence are related to the structure of employment. Major factors include smaller employers, lower wages, greater prevalence of self-employment, and sociodemographic characteristics.

27. Source: BMC Musculoskelet Disord. 2005 Feb 4;6(1):5.

Title: **Effect of urbanization on bone mineral density: a Thai epidemiological study.**

Author: **Pongchaiyakul C, Nguyen TV, Kosulwat V, Rojroongwasinkul N, Charoenkiatkul S, Rajatanavin R.**

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BACKGROUND: The incidence of fractures in rural populations is lower than in urban populations, although the reason for this difference is unclear. This cross-sectional study was designed to examine the difference in bone mineral density (BMD), a primary predictor of fracture risk, between urban and rural Thai populations. METHODS: Femoral neck and lumbar spine BMD was measured by dual-energy X-ray absorptiometry (GE Lunar, Madison, WI) in 411 urban and 436 rural subjects (340 men and 507 women), aged between 20 and 84 years. Body mass index (BMI) was calculated from weight and height. RESULTS: After adjusting for age and body weight in an analysis of covariance model, femoral neck BMD in rural men and women was significantly higher than those in urban men and women ($P < 0.001$), but the difference was not observed at the lumbar spine. After stratifying by sex, age group, and BMI category, the urban-rural difference in femoral neck BMD became more pronounced in men and women aged <50 years and with BMI ≥ 25 kg/m². CONCLUSIONS: These data suggest that femoral neck BMD in rural men and women was higher than their counterparts in urban areas. This difference could potentially explain part of the urban-rural difference in fracture incidence.

28. Source: Community Dent Oral Epidemiol. 2005 Feb;33(1):1-8.

Title: **Total fluoride intake in children aged 22-35 months in four Colombian cities.**

Author: **Franco AM, Martignon S, Saldarriaga A, Gonzalez MC, Arbelaez MI, Ocampo A, Luna LM, Martinez-Mier EA, Villa AE.**

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OBJECTIVE: To obtain information on the level of total fluoride intake from food, beverages and toothpaste by children at the age of 22-25 months of low and high socioeconomic status (SES) in major Colombian cities. METHODS: Daily fluoride intake was assessed by the duplicate plate method and by recovered toothpaste solution during a 3-day period and afterwards analysed by the microdiffusion method. RESULTS: Mean daily fluoride intake was 0.11 (± 0.10), 0.14 (± 0.12), 0.10 (± 0.07) and 0.07 (± 0.06) mg/kg body weight (bw)/day in Bogota, Medellin, Manizales and Cartagena, respectively. The total fluoride intake was higher in low-SES subjects in the cities of Medellin and Bogota. In the high-SES children of the four cities, the average intakes ranged from 0.06 to 0.09 mg F/kg bw, whereas, the low-SES children in three cities had intakes between 0.11 and 0.21 mg F/kg bw (Cartagena, 0.07). Toothpaste (containing 1000-1500 ppm F, with 1500 ppm F being more common) accounted for approximately 70% of total fluoride intake, followed by food (24%) and beverages (<6%). More than half the children had their teeth brushed by an adult, on average twice a day, using 0.22-0.65 g of toothpaste. CONCLUSION: Children from three Colombian cities have a mean total daily fluoride intake above the 'optimal range'. Health authorities should promote an appropriate use of fluoridated dentifrices discouraging the use of dentifrices containing 1500 ppm F in children younger than 6 years of age and promoting a campaign of education of parents and oral health professionals on adequate toothbrushing practices.

29. Source: Environ Res. 2005 Jan;97(1):93-9.

Title: **Blood manganese concentrations among first-grade schoolchildren in two South African cities.**

Author: **Rollin H, Mathee A, Levin J, Theodorou P, Wewers F.**

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Little information exists on the environmental exposures to low levels of organometallic manganese (a principal combustion product from manganese-containing fuel additives) and public health. This study was undertaken to establish biological and environmental levels of manganese among first-grade schoolchildren in the South African cities of Johannesburg and Cape Town. The study was undertaken subsequent to partial introduction of the manganese-containing fuel additive methylcyclopentadienyl manganese tricarbonyl (MMT) to South African petrol in the Johannesburg region only, about 24 months prior to the commencement of the study, and in anticipation of possible future increases in MMT use in the rest of the country. This study involved the measurement of manganese concentrations in the blood of the total number of 814 of grade one schoolchildren (430 and 384 in Cape Town and Johannesburg, respectively), and in water supplies, soil, and classroom dust at a total number of 21 participating schools. The results indicated higher concentrations of manganese in school soil ($P=0.0007$) and dust ($P=0.0071$) samples from Johannesburg relative to Cape Town. Similarly, the mean blood manganese concentration in Johannesburg study subjects (9.80 microg/L, SD 3.59) was significantly higher than that in Cape Town study subjects (6.74 microg/L, SD 3.47), after allowing for the clustering effect within schools and adjusting for the confounding effect of population group ($P<0.0001$). The blood manganese levels of 4.2% and 12.5% of children in Cape Town and Johannesburg, respectively, equaled or exceeded 14 microg/L, the upper normal reference value specified by the Agency for Toxic Substances Disease Registry (ATSDR, 2000). Importantly, levels of manganese in blood were found to be significantly associated with concentrations of manganese in classroom dust at schools.

30. Source: Sex Transm Infect. 2005 Feb;81(1):17-23.

Title: **Prevalence of urogenital Chlamydia trachomatis increases significantly with level of urbanisation and suggests targeted screening approaches: results from the first national population based study in the Netherlands.**

Author: **van Bergen J, Gotz HM, Richardus JH, Hoebe CJ, Broer J, Coenen AJ; PILOT CT study group.**

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OBJECTIVES: Chlamydia trachomatis (Chlamydia) is the most prevalent sexually transmitted bacterial infection and can cause considerable reproductive morbidity in women. Chlamydia screening programmes have been considered but policy recommendations are hampered by the lack of population based data. This paper describes the prevalence of Chlamydia in 15-29 year old women and men in rural and urban areas, as determined through systematic population based screening organised by the Municipal Public Health Services (MHS), and discusses the implications of this screening strategy for routine implementation. **METHODS:** Stratified national probability survey according to "area address density" (AAD). 21 000 randomly selected women and men in four regions, aged 15-29 years received a home sampling kit. Urine samples were returned by mail and tested by polymerase chain reaction (PCR). Treatment was via the general practitioner, STI clinic, or MHS clinic. **RESULTS:** 41% (8383) responded by sending in urine and questionnaire. 11% (2227) returned a refusal card. Non-responders included both higher and lower risk categories. Chlamydia prevalence was significantly lower in rural areas (0.6%, 95% CI 0.1 to 1.1) compared with very highly urbanized areas (3.2%, 95% CI 2.4 to 4.0). Overall prevalence was 2.0% (95% CI 1.7 to 2.3): 2.5% (95% CI 2.0 to 3.0%) in women and 1.5% (95% CI 1.1 to 1.8) in men. Of all cases 91% were treated. Infection was associated with degree of urbanisation, ethnicity, number of sex partners, and symptoms. **CONCLUSION:** This large, population based study found very low prevalence in rural populations, suggesting that nationwide systematic screening is not indicated in the Netherlands and that targeted approaches are a better option. Further analysis of risk profiles will contribute to determine how selective screening can be done.

31. Source: J Urban Health. 2005 Mar;82(1):43-57. Epub 2005 Feb 28.

Title: **Alcohol, stress-related factors, and short-term absenteeism among urban transit operators.**

Author: **Cunradi CB, Greiner BA, Ragland DR, Fisher J.**

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Transit operators, relative to workers in many other occupations, experience high levels of work-related stress, as documented through neuroendocrine elevations on the job vis-a-vis resting states (J Occup Health Psychol. 1998;3:122-129). Previous research suggests that self-reported job stress is associated with higher levels of alcohol consumption among transit operators (Alcohol Clin Exp Res. 2000;24:1011-1019) and with absenteeism (Working Environment for Local Public Transport Personnel, Stockholm: Swedish Work Environmental Fund, 1982; Work Stress. 1990;4:83-89). The purpose of this study was to examine the interrelationships between alcohol use, stress-related factors (stressful life events, job stressors, and burnout), and short-term absenteeism among a multiethnic cohort of urban transit operators. Self-reported measures of alcohol, stress-related factors, and short-term absenteeism were obtained from a sample (n=1,446) of San Francisco municipal transit operators who participated in the 1993-1995 Municipal Railway Health and Safety Study. Multivariate logistic regression analyses showed that absenteeism among drinkers was associated with risk for alcohol dependence [odds ratio (OR)=2.46, heavy drinking (OR=1.87), alcohol-related harm (OR=2.17), increased drinking since becoming a transit operator (OR=1.74), and having any problem drinking indicator (OR=1.72). The association between absenteeism and stress-related factors varied by gender and drinking status. Final multivariate models among drinkers indicated that among males, problem drinking (OR=1.82), stressful life events (OR=1.62), and job burnout (OR=1.22) were independently associated with elevated odds of absenteeism. Among female drinkers, only stressful life events (OR=5.17) was significantly associated with elevated odds of absenteeism. Findings suggest that workplace interventions that address both individual and environmental stressors are most likely to have a positive impact on health-related outcomes, including problem drinking, thereby reducing absenteeism.

32. Source: Public Health. 2005 Feb;119(2):97-104.

Title: **Area-level determinants of specialty care utilization in France: a multilevel analysis.**

Author: **Chaix B, Boelle PY, Guilbert P, Chauvin P.**

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OBJECTIVES: We investigated the effects of the density of specialists and of the area-level percentage of highly educated individuals on the odds of consulting a specialist, and examined whether these variables could explain the observed urban/rural contrast in utilization of specialty care. **STUDY DESIGN:** The study sample, representative of the French population aged 18-75 years in 1999, comprised 12,435 individuals. **METHODS:** Multilevel logistic models allowed us to investigate predictors of the odds of consulting a specialist occasionally, regularly and frequently over the previous 12 months. **RESULTS:** We observed a modest but significant clustering within areas of the utilization of specialty care, with higher levels of clustering for behaviours representing heavy consumption of care. After adjustment for individual factors, the odds of consulting a specialist were higher in larger cities compared with rural areas, but most of this effect was attributable to other area-level variables. These area-level effects were different in magnitude and nature among males and females. Among males, the odds of consulting a specialist increased with the area-level density of specialists. Among females, such an effect was not significant, but the odds of consulting a specialist increased with the area-level percentage of highly educated individuals. **CONCLUSIONS:** Further investigation is required to better understand the processes operating at the area level that were shown to affect healthcare utilization in a different way for males and females. Policies may be needed to address problems of geographical access to specialty care, as well as situations of overuse of specialty care without regular recourse to primary care.

33. Source: *Prev Med.* 2005 Jan;40(1):83-91.

Title: **Family characteristics and smoking among urban and rural adolescents living in China.**

Author: **Shakib S, Zheng H, Johnson CA, Chen X, Sun P, Palmer PH, Yan L, Jie G, Unger JB.**

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BACKGROUND: Adolescent smoking is a public health concern in China. Although the family is an important social influence in China, few associations among family characteristics and adolescent smoking have been examined using Chinese samples. **METHODS:** Survey data on psychosocial variables and smoking were collected from a sample of 3629 7th grade adolescents (46% female; 54% male; mean age 12.7 years) in Wuhan, China. For adolescents, past 30-day smoking, family relationships, parents' negative sanctioning of smoking, parents' agreement with smoking, and parents' smoking behaviors are assessed. To account for the clustered data structure, hierarchical logistic regression analyses controlling for demographics (urbanization, age) examined the independent and multivariate effects of family characteristics for each gender. **RESULTS:** Girls are less likely than boys to report smoking and are more likely to report positive family relationships, and having parents with negative attitudes toward them smoking. Positive family relationships and age were strongly associated with smoking for both genders. No significant differences exist by gender. **CONCLUSION:** These findings suggest that the quality of family relationships are important for adolescent female and male smoking in China.

34. Source: *Am J Public Health.* 2005 Feb;95(2):236-7.

Title: **Prevalence of active commuting at urban and suburban elementary schools in Columbia, SC.**

Author: **Sirard JR, Ainsworth BE, McIver KL, Pate RR.**

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We directly observed the prevalence of walking and bicycling (active commuting) to 8 randomly selected urban and suburban elementary schools. When school was used as the unit of analysis, only 5.0% of the students actively commuted to or from school across all observed trips. Active commuting was not affected ($P \geq .18$) by school urbanization level, school socioeconomic status, time of day, day of week, weather conditions, or temperature. These results indicate a need for school- and community-based interventions.

Topic D. Public health history: lessons for urban health

35. Source: *Am J Prev Med.* 2005 Feb;28(2 Suppl 2):96-104.

Title: **The public health roots of zoning: in search of active living's legal genealogy.**

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BACKGROUND: Improvements in the built environment and changes in land-use policy are promising approaches to increasing physical activity among a largely sedentary population. Opportunities for walking and cycling as part of daily life are important to increasing physical activity and improving health. Yet, local zoning codes and related land-use regulations have made it difficult to create vibrant, mixed-use neighborhoods with well-connected streets and more compact development-the infrastructure necessary to support healthier rates of walking and cycling for transportation. **METHODS:** To better understand the dynamic nature of land-use law and policy, and how policymakers might accomplish zoning reform to encourage more physically active environments, this paper traces the public health roots of zoning through a family tree of land-use legal doctrines. **RESULTS:** Zoning and public health laws evolved from the same legal ancestors-the common law of public nuisance and the expansion of state police powers, both premised on protection of the public's health. When the U.S. Supreme Court approved zoning in the 1926 case of *Ambler Realty v. Village of*

Euclid, it nominally recognized the health basis of zoning. But it went on to craft a new legal rationale focused more on protection of property rights and residential neighborhoods. Since Euclid, court decisions have given little consideration to the public health roots of zoning. Given an emerging body of research demonstrating the importance of walking-friendly environments and the deference shown by the courts to the passage of zoning laws, the courts are likely to support policymakers as they move to change zoning systems conceived long ago. CONCLUSIONS: Legal, historical, and policy rationales support the modernization of zoning and land use policies that allow sensible mixes of land uses. Mixed land uses make walking an attractive alternative to driving and support a more physically active and healthy citizenry.

36. Source: J Hist Med Allied Sci. 2005 Jan;60(1):42-72.

Title: **Sewers in the city: a case study of individual-level mortality and public health initiatives in Northampton, Massachusetts, at the turn of the century.**

Author: **Beemer JK, Anderton DL, Leonard SH.**

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Emerging industrial communities of nineteenth-century New England experienced both rapid population growth and lagging development of public health infrastructures. In turn, high mortality in these newly urban cities contributed to a delay in the regional mortality transition of the late nineteenth century. Analyzing death records and a file of linked cause-specific death and manuscript census records for the industrializing community of Northampton, Massachusetts, we show that early in the city's development, mortality clustered near industrial activities and open sewers. When industrial areas were sewered, clustering of mortality abated, and differences between industrial and commercial areas of the town were no longer significant. These findings illustrate Szreter's emphasis on considering both the benefits and costs of development. (1) Initial development contributed to high mortality in newly emergent urban-industrial centers like Northampton and was abated only when lagging public health infrastructures caught up with rapid growth and development near the turn of the century.

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