

**Supplement Table 1.** Spatial methods by substantive topics.

		Proximity	Aggregation	Clustering	Interpolation	Smoothing	Spatial Regression
	<i>Marginal Total</i> *	65	44	36	14	12	47
Disparities (race/ethnic or socio-economic disparities)	25	10	6	5		1	5
Mortality	18	3	2	2	1	4	8
Birth outcomes (birth defects, pre-term birth, etc.)	14	8	2	2	1		2
Cancer	33	10	2	11	1	4	8
Other chronic diseases (CVD, diabetes, asthma, respiratory conditions, etc.)	31	11	7	1	4	2	7
Infectious disease	21	3	2	8	6	2	6
Behavioral (physical activity, diet, obesity, drug use)	17	7	10				1
Neurological issues and mental health (Parkinson's, depression, etc.)	13	4	3	5			3
Resource related (health clinic access, food or physical activity environments, optimizing location)	40	17	20	1	2		4
Air quality and climate	46	21	12	1	4		11
Other physical environment studies (toxic waste/landfill, electromagnetic fields, etc.)	22	13	2		1		7

\* Each article can be represented more than once. Cells are not mutually exclusive, thus, the sum of cells does not equal the marginal totals and the sum of the marginal totals does not equal the number of unique articles (n=195). For example, a disparity article can involve 1 or more methods and an article that uses spatial proximity measures could involve 1 or more substantive categories.

**Supplement Table 2.** List of articles selected for inclusion, articles published in seven target journals January 2000 through February 28, 2011.

**A. Citations that discuss georeferencing, n=14**

1. Boone JE, Gordon-Larsen P, Stewart JD, Popkin BM. 2008. Validation of a GIS facilities database: quantification and implications of error. *Ann Epidemiol* 18:371-7
2. Bonner MR, Han D, Nie J, Rogerson P, Vena JE, Freudenheim JL. 2003. Positional accuracy of geocoded addresses in epidemiologic research. *Epidemiology* 14:408-12
3. Hampton KH, Fitch MK, Allshouse WB, Doherty IA, Gesink DC, et al. 2010. Review - Mapping health data: improved privacy protection with donut method geomasking. *Am J Epidemiol* 172:1062-9
4. Hurley SE, Saunders TM, Nivas R, Hertz A, Reynolds P. 2003. Post office box addresses: A challenge for geographic information system-based studies. *Epidemiology* 14:386-91
5. Krieger N, Chen JT, Waterman PD, Soobader MJ, Subramanian SV, Carson R. 2003. Choosing area based socioeconomic measures to monitor social inequalities in low birth weight and childhood lead poisoning: The Public Health Disparities Geocoding Project (US). *J Epidemiol Community Health* 57:186-99
6. Liese AD, Colabianchi N, Lamichhane AP, Barnes TL, Hibbert JD, et al. 2010. Validation of 3 Food Outlet Databases: Completeness and Geospatial Accuracy in Rural and Urban Food Environments. *Am J Epidemiol* 172:1324-33
7. McElroy JA, Remington PL, Trentham-Dietz A, Robert SA, Newcomb PA. 2003. Geocoding addresses from a large population-based study: lessons learned. *Epidemiology* 14:399-407
8. Ong P, Graham M, Houston D. 2006. Policy and programmatic importance of spatial alignment of data sources. *Am J Public Health* 96:499-504
9. Schootman M, Jeffe D, Kinman E, Higgs G, Jackson-Thompson J. 2005. Evaluating the utility and accuracy of a reverse telephone directory to identify the location of survey respondents. *Ann Epidemiol* 15:160-6
10. Schootman M, Sterling DA, Struthers J, Yan Y, Laboube T, et al. 2007. Positional accuracy and geographic bias of four methods of geocoding in epidemiologic research. *Ann Epidemiol* 17:464-70
11. Voigt LF, Davis S, Koepsell TD. 2006. Do cases and controls matched on the first eight digits of their telephone number share geographic proximity and socioeconomic characteristics? *Ann Epidemiol* 16:299-304
12. Ward MH, Nuckols JR, Giglierano J, Bonner MR, Wolter C, et al. 2005. Positional accuracy of two methods of geocoding. *Epidemiology* 16:542-7
13. Whitsel EA, Rose KM, Wood JL, Henley AC, Liao DP, Heiss G. 2004. Accuracy and repeatability of commercial geocoding. *Am J Epidemiol* 160:1023-9
14. Zhan FB, Brender JD, De Lima I, Suarez L, Langlois PH. 2006. Match rate and positional accuracy of two geocoding methods for epidemiologic research. *Ann Epidemiol* 16:842-9

**B. Citations using spatial methods that are not part of the georeferencing section, n=193**

1. Allen RW, Criqui MH, Diez Roux AV, Allison M, Shea S, et al. 2009. Fine particulate matter air pollution, proximity to traffic, and aortic atherosclerosis. *Epidemiology* 20:254-64
2. Anderson BG, Bell ML. 2009. Weather-related mortality: how heat, cold, and heat waves affect mortality in the United States. *Epidemiology* 20:205-13
3. Auchincloss AH, Diez Roux AV, Brown DG, O'Meara ES, Raghunathan TE. 2007. Association of insulin resistance with distance to wealthy areas: the multi-ethnic study of atherosclerosis. *Am J Epidemiol* 165:389-97
4. Auchincloss AH, Diez Roux AV, Brown DG, Raghunathan TE, Erdmann CA. 2007. Filling the gaps: spatial interpolation of residential survey data in the estimation of neighborhood characteristics. *Epidemiology* 18:469-78
5. Austin SB, Melly SJ, Sanchez BN, Patel A, Buka S, Gortmaker SL. 2005. Clustering of fast-food restaurants around schools: a novel application of spatial statistics to the study of food environments. *Am J Public Health* 95:1575-81
6. Babisch W, Beule B, Schust M, Kersten N, Ising H. 2005. Traffic noise and risk of myocardial infarction. *Epidemiology* 16:33-40

7. Bader MD, Ailshire JA, Morenoff JD, House JS. 2010. Measurement of the local food environment: a comparison of existing data sources. *Am J Epidemiol* 171:609-17
8. Ball K, Timperio A, Salmon J, Giles-Corti B, Roberts R, Crawford D. 2007. Personal, social and environmental determinants of educational inequalities in walking: a multilevel study. *J Epidemiol Community Health* 61:108-14
9. Bates SJ, Trostle J, Cevallos WT, Hubbard A, Eisenberg JN. 2007. Relating diarrheal disease to social networks and the geographic configuration of communities in rural Ecuador. *Am J Epidemiol* 166:1088-95
10. Bayer-Oglesby L, Schindler C, Hazenkamp-von Arx ME, Braun-Fahrlander C, Keidel D, et al. 2006. Living near main streets and respiratory symptoms in adults: the Swiss Cohort Study on Air Pollution and Lung Diseases in Adults. *Am J Epidemiol* 164:1190-8
11. Beelen R, Hoek G, van den Brandt PA, Goldbohm RA, Fischer P, et al. 2008. Long-term exposure to traffic-related air pollution and lung cancer risk. *Epidemiology* 19:702-10
12. Bell EM, Hertz-Picciotto I, Beaumont JJ. 2001. Case-cohort analysis of agricultural pesticide applications near maternal residence and selected causes of fetal death. *Am J Epidemiol* 154:702-10
13. Bell EM, Hertz-Picciotto I, Beaumont JJ. 2001. A case-control study of pesticides and fetal death due to congenital anomalies. *Epidemiology* 12:148-56
14. Berke EM, Tanski SE, Demidenko E, Alford-Teaster J, Shi X, Sargent JD. 2010. Alcohol retail density and demographic predictors of health disparities: a geographic analysis. *Am J Public Health* 100:1967-71
15. Bernstein KT, Curriero FC, Jennings JM, Olthoff G, Erbeling EJ, Zenilman J. 2004. Defining core gonorrhea transmission utilizing spatial data. *Am J Epidemiol* 160:51-8
16. Best N, Hansell AL. 2009. Geographic variations in risk: adjusting for unmeasured confounders through joint modeling of multiple diseases. *Epidemiology* 20:400-10
17. Blaasaas KG, Tynes T, Lie RT. 2003. Residence near power lines and the risk of birth defects. *Epidemiology* 14:95-8
18. Boyd HA, Flanders WD, Addiss DG, Waller LA. 2005. Residual spatial correlation between geographically referenced observations: a Bayesian hierarchical modeling approach. *Epidemiology* 16:532-41
19. Brauer M, Hoek G, van Vliet P, Meliefste K, Fischer P, et al. 2003. Estimating long-term average particulate air pollution concentrations: application of traffic indicators and geographic information systems. *Epidemiology* 14:228-39
20. Buonocore JJ, Lee HJ, Levy JI. 2009. The influence of traffic on air quality in an urban neighborhood: a community-university partnership. *Am J Public Health* 99 Suppl 3:S629-35
21. Cervero R, Duncan M. 2003. Walking, bicycling, and urban landscapes: evidence from the San Francisco Bay Area. *Am J Public Health* 93:1478-83
22. Chaix B, Leyland AH, Sabel CE, Chauvin P, Rastam L, et al. 2006. Spatial clustering of mental disorders and associated characteristics of the neighbourhood context in Malmo, Sweden, in 2001. *J Epidemiol Community Health* 60:427-35
23. Chaix B, Merlo J, Chauvin P. 2005. Comparison of a spatial approach with the multilevel approach for investigating place effects on health: the example of healthcare utilisation in France. *J Epidemiol Community Health* 59:517-26
24. Chaix B, Merlo J, Subramanian SV, Lynch J, Chauvin P. 2005. Comparison of a spatial perspective with the multilevel analytical approach in neighborhood studies: the case of mental and behavioral disorders due to psychoactive substance use in Malmo, Sweden, 2001. *Am J Epidemiol* 162:171-82
25. Chakraborty J, Zandbergen PA. 2007. Children at risk: measuring racial/ethnic disparities in potential exposure to air pollution at school and home. *J Epidemiol Community Health* 61:1074-9
26. Che D, Decludt B, Campese C, Desenclos JC. 2003. Sporadic cases of community acquired legionnaires' disease: an ecological study to identify new sources of contamination. *J Epidemiol Community Health* 57:466-9
27. Cheng AC, Jacups SP, Gal D, Mayo M, Currie BJ. 2006. Extreme weather events and environmental contamination are associated with case-clusters of melioidosis in the Northern Territory of Australia. *Int J Epidemiol* 35:323-9
28. Cliff AD, Haggett P, Smallman-Raynor M. 2008. An exploratory method for estimating the changing speed of epidemic waves from historical data. *Int J Epidemiol* 37:106-12
29. Cohen D, Spear S, Scribner R, Kissinger P, Mason K, Wildgen J. 2000. "Broken windows" and the risk of gonorrhea. *Am J Public Health* 90:230-6
30. Colonna M. 2004. Bootstrap investigation of the stability of disease mapping of Bayesian cancer relative risk estimations. *Eur J Epidemiol* 19:761-8

31. Cooper HL, Des Jarlais DC, Ross Z, Tempalski B, Bossak B, Friedman SR. 2010. Spatial Access to Syringe Exchange Programs and Pharmacies Selling Over-the-Counter Syringes as Predictors of Drug Injectors' Use of Sterile Syringes. *Am J Public Health*
32. Dadvand P, Rankin J, Rushton S, Pless-Mulloli T. 2011. Association between maternal exposure to ambient air pollution and congenital heart disease: A register-based spatiotemporal analysis. *Am J Epidemiol* 173:171-82
33. D'Aignaux JH, Cousens SN, Delasnerie-Laupretre N, Brandel JP, Salomon D, et al. 2002. Analysis of the geographical distribution of sporadic Creutzfeldt-Jakob disease in France between 1992 and 1998. *Int J Epidemiol* 31:490-5
34. Darrow LA, Klein M, Flanders WD, Waller LA, Correa A, et al. 2009. Ambient air pollution and preterm birth: a time-series analysis. *Epidemiology* 20:689-98
35. Davis B, Carpenter C. 2009. Proximity of fast-food restaurants to schools and adolescent obesity. *Am J Public Health* 99:505-10
36. Diez Roux AV, Evenson KR, McGinn AP, Brown DG, Moore L, et al. 2007. Availability of recreational resources and physical activity in adults. *Am J Public Health* 97:493-9
37. Ditsuwan T, Liabsuetrakul T, Chongsuvivatwong V, Thammapalo S, McNeil E. 2011. Assessing the spreading patterns of dengue infection and chikungunya Fever outbreaks in lower southern Thailand using a geographic information system. *Ann Epidemiol* 21:253-61
38. Dominguez-Berjon MF, Gandarillas A, Segura del Pozo J, Zorrilla B, Soto MJ, et al. 2010. Census tract socioeconomic and physical environment and cardiovascular mortality in the Region of Madrid (Spain). *J Epidemiol Community Health* 64:1086-93
39. Doocy S, Gorokhovich Y, Burnham G, Balk D, Robinson C. 2007. Tsunami mortality estimates and vulnerability mapping in Aceh, Indonesia. *Am J Public Health* 97 Suppl 1:S146-51
40. Dummer TJ, Dickinson HO, Parker L. 2003. Adverse pregnancy outcomes around incinerators and crematoriums in Cumbria, north west England, 1956-93. *J Epidemiol Community Health* 57:456-61
41. Edwards KL, Clarke GP, Ransley JK, Cade J. 2010. The neighbourhood matters: studying exposures relevant to childhood obesity and the policy implications in Leeds, UK. *J Epidemiol Community Health* 64:194-201
42. Emch M, Ali M, Park JK, Yunus M, Sack DA, Clemens JD. 2006. Relationship between neighbourhood-level killed oral cholera vaccine coverage and protective efficacy: evidence for herd immunity. *Int J Epidemiol* 35:1044-50
43. Feltbower RG, Manda SO, Gilthorpe MS, Greaves MF, Parslow RC, et al. 2005. Detecting small-area similarities in the epidemiology of childhood acute lymphoblastic leukemia and diabetes mellitus, type 1: a Bayesian approach. *Am J Epidemiol* 161:1168-80
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46. Garshick E, Laden F, Hart JE, Caron A. 2003. Residence near a major road and respiratory symptoms in U.S. Veterans. *Epidemiology* 14:728-36
47. Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, et al. 2005. Childhood asthma and exposure to traffic and nitrogen dioxide. *Epidemiology* 16:737-43
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49. Gemperli A, Vounatsou P, Kleinschmidt I, Bagayoko M, Lengeler C, Smith T. 2004. Spatial patterns of infant mortality in Mali: the effect of malaria endemicity. *Am J Epidemiol* 159:64-72
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87. Knox EG. 2005. Childhood cancers and atmospheric carcinogens. *J Epidemiol Community Health* 59:101-5
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89. Knox EG. 2006. Roads, railways, and childhood cancers. *J Epidemiol Community Health* 60:136-41
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