PUBLIC HEALTH GIS NEWS AND INFORMATION

March 2005 **(No. 63)**

Dedicated to CDC GIS Scientific Excellence and Advancement in
Disease, Injury and Disability Control and Prevention, and Biologic, Chemical and Occupational Safety

I. Public Health GIS (and related) Events:

SPECIAL NCHS/CDC GIS LECTURES

Please join us on March 31, 2005, at 2:00PM (EST), RM 1404, at NCHS! "Bayesian Modeling of Event Risk Surfaces," Lee De Cola, PhD, MCP, Research Geographer and Mathematician, U.S. Geological Survey, and Adjunct Professor, George Mason and Georgetown Universities. The NCHS GIS Guest Lecture Series has been presented continuously at NCHS since 1988. Please note our regular time of **2:00PM** for this presentation. As with all live lectures, Envision will be available to offsite CDC locations. Web access will be available to our national and worldwide public health audience; please request URL for viewing, anytime between now and March 30, 2005, from the Editor. The cosponsors to the NCHS Cartography and GIS Guest Lecture Series include CDC's Behavioral and Social Science Working Group (BSSWG) and Statistical Advisory Group (SAG). Note: **NCHS Cartography and GIS lectures are open to all**. We look forward to having you join us. [Contact: Editor, *Public Health GIS News and Information* at cmc2@cdc.gov]

[Note: Calendar events are posted as received; for a more complete listing see NCHS GIS website and calendar]

2005

* American Society for Photogrammetry and Remote Sensing (ASPRS) 2005 Annual Conference, "Geospatial Goes Global: From Your Neighborhood to the Whole Planet," March 7-11, 2005, Baltimore MD [See website at: http://www.asprs.org/baltimore2005]

* Mathematical Modeling for 21st Century Public Health Practice Conference: From Cholera to Smallpox and Beyond, March 9-10, 2005, Palm Springs CA [See the website http://www.creativeeventsolutions.net/modeling]

* Joint Annual Meeting of the California Public Health Association-North and Southern California Public Health, "Improving the Public's Health: The Power of Collaboration," April 4-5, 2005, Oakland CA [See website: http://www.cphan.org/event.html]

* 54th Annual Scientific Epidemic Intelligence Service (EIS) Conference, April 11-15, 2005, Atlanta GA [See site: http://www.cdc.gov/eis]

* National Minority Health Month 2nd Annual Leadership Summit, April 26-27, 2005, Washington, DC [See: http://www.nmhm.org]

* 2005 FDA Science Forum, "FDA Science: Advancing Public Health through Innovative Science," April 27-28, 2005, Washington, DC [See FDA Science Forum website: http://www.fda.gov/scienceforum]

* 2005 National Injury Prevention and Control Conference Injury and Violence in America: "Meeting Challenges, Sharing Solutions," May 9-11, 2005, Denver CO [See: http://www.cdc.gov/ncipc/2005conference]

* 3rd Annual Public Health Information Network Conference, Atlanta GA, May 10-12, 2005 [See website at: http://www.cdc.gov/phin]

* 60th Annual Conference American Association for Public Opinion Research, May 12-15, 2005, Miami FL [http://www.aapor.org/default.asp?page=conference_and_events/next_conference]

* 40th Annual Public Health Professional Conference, June 6-10, 2005, Philadelphia PA [Note: June 5th Global Health Summit precedes conference; See conference website at http://www.coausphsconference.org]

* Critical Issues in eHealth Research Conference, National Institutes of Health and the Robert Wood Johnson Foundation, June 9-10, 2005, Bethesda MD [See: http://www.scgcorp.com/ehealthconf2005/abstracts.asp]

* 8th International Conference on VISual Information

Systems (VIS'2005), July 4-5, 2005, Amsterdam, The Netherlands [See: http://lisi.insa-lyon.fr/~laurini/vis2005]

* 9th International Conference on Information Visualization-IV05, July 5-7, 2005, London England [See: http://www.graphicslink.demon.co.uk/IV05/GeoVis.htm]

* Translating Research Into Practice: Highlighting Obesity and Health Disparities Reduction, Agency for Healthcare Research and Quality (AHRQ) and the National Cancer Institute (NCI), July 18-20, 2005, Washington D.C. [See: http://www.ahrq.gov]

* 4th Annual Public Participation GIS Conference (PPGIS), Cleveland State University, July 31-August 2, 2005, Cleveland OH [See conference website and details at: http://www.urisa.org/PPGIS/2005/PPGIS_call.htm]

* 8th International Conference on GeoComputation, August 1-3, 2005, Ann Arbor MI [See conference website: http://igre.emich.edu/geocomputation2005]

* International Conference on Environmental Effects of Agricultural Practices: Remediation, Prevention, and Sustainability, August 21-24, 2005, Hilo HI [See website: http://www.dce.ksu.edu/dce/conf/ag&environment]

* The Annual CityMatCH Urban Maternal and Child Health Leadership Conference, September 10-13, 2005, Dallas/Ft. Worth TX [See: http://www.citymatch.org]

* Statistics Canada's 22nd International Methodology Symposium, "Methodological Challenges for Future Information Needs," October 25-28, 2005, Ottawa Canada [http://www.statcan.ca/english/conferences/symposium2005]

* 133rd Annual Meeting of the American Public Health Association, November 5-9, 2005, New Orleans LA [See: http://www.apha.org/meetings]

* Research Symposium on Societies and Cities in the Age of Instant Access, November 10-12, 2005, Salt Lake City, UT [See: http://www.geog.utah.edu/instant_access]

II. GIS News

[Public Health GIS Users are encouraged to communicate directly with colleagues referenced below on any items; note that the use of trade names and commercial sources that may appear in Public Health *GIS News and Information* is for identification only and does not imply endorsement by CDC]

A. General News and Training Opportunities

1. Editor: In case you missed it, the **University Consortium for Geographic Information Science (UCGIS) Winter Meeting** was held in Washington, DC, February 10-11, 2005. It was officially a **"Congressional Breakfast"**, conducted in the Hart Senate Office Building, and provided a timely forum for UCGIS presentations to interested congressional staffers. It included the following presentations: "West Nile Virus: Eco-epidemiology of Disease Emergence in Urban Areas," Marilyn Ruiz, Department of Veterinary Pathobiology, University of Illinois; "Using GIS to Eliminate Disparities in African American Infant Mortality," Andrew Curtis, Department of Geography and Anthropology, Louisiana State University; "Informing Public Health Policy through Geographic Science: Examples from Emerging Infections and Disaster Management," Charles Branas and Joshua Metlay, Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania School of Medicine; "Linking Health Encounter Data with Environmental Data- a Demonstration Project in Carroll County, Iowa," Gerard Rushton, Department of Geography, University of Iowa, "Protecting Public Health and Food Supplies: GIScience Research for Understanding Plant, Animal and Human Biohazard Interactions," Eric Bernard, Department of Landscape Architecture and Regional and Community Planning, Kansas State University; and, "Arsenic in Drinking Water and Bladder Cancer in Southeastern Michigan," Jerome Nriagu, School of Public Health, University of Michigan and Geoffrey Jacquez, President, Biomedware, Inc.

This was followed by a variety of federal agency briefings including the National Science foundation, National Aeronautics and Space Administration, National Geospatial-Intelligence Agency, Department of Homeland Security and the U.S. Geological Survey. The program concluded with a special session on "Spatial Perspectives on Analysis for Curriculum Enhancement (SPACE)" and included: Arthur Getis, San Diego State University, "The Role of UCGIS as a Cooperating Agency for GIScience Education," Wendy Bigler, Arizona State University; "Bringing Space to the Core: Developing Undergraduate Curriculum in Spatial Reasoning," Timothy Bray, University of Texas at

Dallas; "Introducing Space in a Non-Computational Context," David Rain, The George Washington University; "Integrating GIS and Urban Geography in the Classroom (& Beyond)"; and, Christopher Weiss, Columbia University, "Explaining Changes in Obesity: Examining Spatial Dimensions." [See UCGIS website at http://www.ucgis.org/winter2005/schedule.htm]

2. **GIS and Population Science Workshops**. Two GIS and Population Science workshops (supported by an NICHD R25 training grant) will be offered during Summer 2005: GISPopSci workshops scheduled for May 29-June 11, 2005 (The Pennsylvania State University) and June 19-July 2, 2005 (University of California, Santa Barbara). These workshops will be intensive training experiences lasting two weeks and offer an ideal opportunity to learn more about spatial analysis and GIS as applied to population science.

Hands-on exercises and demonstrations will cover issues associated with spatial data handling e.g., address-matching, deriving new variables, integrating different types of contextual data as well as using spatial analysis tools within a GIS for data visualization and modeling. The workshop will focus on applications and demonstrations drawn from studies of urban poverty, neighborhood research, racial/ethnic diversity, maternal and child health and wellbeing, and population-environment relations. Similarly, workshop lab exercises will be based on demographic and other socio-economic and health-related data commonly used by population scientists. Additional details about the workshops and the application process are available at the project website at http://www.csiss.org/GISPopSci. **The application deadline is April 10, 2005.**

Applications are encouraged from all citizen groups, including underrepresented minorities and applications from designated minority-serving institutions. Limited funds (up to a maximum of $1,250) will be available to help offset costs incurred by attendees with priority given to graduate student applicants. [The contact and coordinator for these workshops is Stephen Matthews, GISPopSci Workshop Coordinator, Associate Professor of Geography, Demography, & Sociology Director, Geographic Information Analysis Core at the Population Research Institute, The Pennsylvania State University at email address matthews@pop.psu.edu; All inquiries should be directed to Dr. Mathews]

3. **Health Geoinformatics Summer Institute**: June 20-September 2, 2005. Loma Linda University School of Public Health (LLUSPH) invites you to apply for the Health Geoinformatics Summer Institute from June 20-September 2, 2005. The 10-week program is divided into two sessions of five weeks per session. Students receive instruction in the entire graduate certificate program curriculum in health geoinformatics. Participants may choose to take all courses or as many courses as desired (total up to 12 units). Courses include: Principles of Geographic Information Systems & Science; GIS Software Applications and Methods; Cartography and Mapping; Integration of Geospatial data in GIS; Spatial Analytic Techniques and GIS; Practical Issues in GIS; Healthcare Geographics; GIS for Public Health Practice; Introduction to Spatial Epidemiology; and, GIS for Environmental Health and Safety. [See geoinformatics at http://www.llu.edu/llu/sph/geoinformatics/courses.htm; Person: Seth Wiafe at swiafe@sph.llu.edu]

4. From Catherine Palmer, Department of Public Health, Flinders University: **National Short Course in Anthropology & Public Health**, from July 11-15, 2005, Adelaide, South Australia. The course covers topics such as: anthropology as a framework for understanding public health issues; the ways in which health and illness are socially constructed in different cultural settings; mental health in cross-cultural contexts; culturally appropriate health promotion; the cultural underpinnings of health policy, programs and organisations; anthropological methods in public health research (evaluation, needs assessment, empirical research); the linkages between epidemiological and anthropological perspectives in public health; health and human rights; health inequities; and the application of anthropological theory to public health issues and practice.

The course will draw on a wide range of real examples to illustrate these topics, including: reproductive practices in Brazil, mental health/illness in Australia and SE Asia, anorexia in North America and Scotland, poverty and famine in a global context, Indigenous health issues, 'risky' health behaviours, AIDS/ HIV in Africa and the Caribbean, physical activity in Europe, community health and development and health organisations in Australia and abroad. [Contact: Trish Clark in the first instance to inquire if there are vacancies in the short course and to tentatively book your place: Trish Clark at public.health@flinders.edu.au]

5. Announcing **New Zealand's GeoHealth Laboratory**. The GeoHealth Laboratory was launched by the Minister of Health, the Honorable Annette King, in November 2004 at the GeoHealth 2004 Conference in Wellington. "The GeoHealth Research Laboratory will develop a practically-led research portfolio, focused towards delivering high quality information to help better our understanding of the spatial patterns and determinants of disease in New Zealand (see full speech at http://www.beehive.govt.nz/ViewDocument.cfm?DocumentID=21581)." The GeoHealth Laboratory is a joint venture between the Department of Geography, University of Canterbury and the Public Health Intelligence group of the Ministry of Health.

The aim of the collaboration is to build a strategic partnership between the parties around health geography, spatial epidemiology and GIS; and to increase research capacity and research outputs in the health and GIS academic sectors. Funded for three years in the first instance, the collaboration seeks to advance the University of Canterbury's research agenda in the Health Sciences and the strategic aims of the Ministry of Health. The collaboration provides a resource that is unique in the Southern hemisphere. Projects include neighbourhoods and health, health inequalities, social dimensions of cancer, air pollution and health, environmental justice, social gradients in health care utilization, spatial-temporal modeling of road traffic accidents, the use of spatial statistics in health research, patterns of suicide and severe mental illness in New Zealand, community health care, rural primary health care and zoontoic diseases and pathways of transmission. Scholarships now are available for suitably qualified postgraduate students who wish to undertake a Masters degree in the Health and GIS area. [Contact and point of contact: Jamie Pearce, Director, GeoHealth Laboratory at jamie.pearce@canterbury.ac.nz]

6. The Census Bureau recently published an informational booklet, **American Community Survey: A Handbook for State and Local Officials**, which provides basic information on the survey, how states and local communities benefit from updated information, and where to find additional information. The booklet also contains a data release schedule. [See this handbook website at: http://www.census.gov/acs/www/Downloads/ACS04HSLO.pdf]

B. Department of Health and Human Services

http://www.hhs.gov

7. New **National Response Plan** released by the Department of Homeland Security. The National Response Plan divides the government's emergency operations into 15 emergency support functions. HHS is the lead agency for Emergency Support Function Eight (ESF-8)-public health and medical services. In this role and through the HHS Secretary's Operations Center, the department coordinates all federal resources related to public health and medical services made available to assist state, local and tribal officials during a major disaster or emergency. HHS responsibilities under ESF-8 include coordination of HHS assets such as the Secretary's Emergency Response Teams, the Surgeon General's cadre of deployable health care professionals from the U.S. Public Health Service Commissioned Corps, the Centers for Disease Control and Prevention's public health experts and its Laboratory Response Network, and the Strategic National Stockpile of pharmaceuticals and medical equipment.

During major disasters and emergencies, HHS will also coordinate medical resources from all other federal agencies. This includes the Department of Homeland Security's National Disaster Medical System assets such as the Disaster Medical Assistance Teams; use of the Department of Veterans' Affairs facilities and health care professionals; and the Department of Defense's medical resources. [A copy of the National Response Plan is available online as a PDF file at http://www.dhs.gov/dhspublic/interapp/editorial/editorial_0566.xml]

8. The Department of Health and Human Services released its Eleventh Edition of the Report on Carcinogens last week, adding seventeen substances to the growing list of cancer-causing agents, bringing the total to 246. For the first time ever, viruses are listed in the report: hepatitis B virus, hepatitis C virus, and some human papillomaviruses that cause common sexually transmitted diseases. Other new listings include lead and lead compounds, X-rays, compounds found in grilled meats, and a host of substances used in textile dyes, paints and inks. "Among U.S. residents, 1 in 2 men and 1 in 3 women will develop cancer at some point in their lifetimes. Research shows that environmental factors trigger diseases like cancer, especially when someone has a family history," said Kenneth Olden, Ph.D., Director of the National Institute of Environmental Health Sciences and the National Toxicology Program. [See HHS news site:

http://www.hhs.gov/news/newsletter/weekly]

9. The ***Dietary Guidelines for Americans 2005*** [*Dietary Guidelines*] provides science-based advice to promote health and to reduce risk for major chronic diseases through diet and physical activity. Major causes of morbidity and mortality in the United States are related to poor diet and a sedentary lifestyle. Some specific diseases linked to poor diet and physical inactivity include cardiovascular disease, type 2 diabetes, hypertension, osteoporosis, and certain cancers. Furthermore, poor diet and physical inactivity, resulting in an energy imbalance (more calories consumed than expended), are the most important factors contributing to the increase in overweight and obesity in this country. Combined with physical activity, following a diet that does not provide excess calories according to the recommendations in this document should enhance the health of most individuals. [See dietary guidelines website at: http://www.healthierus.gov/dietaryguidelines]

Administration for Children and Families

http://www.acf.dhhs.gov

10. **A Charge We Have To Keep: A Road Map to Personal and Economic Freedom for Persons with Intellectual Disabilities in the 21st Century-2004** [Excerpts]. Employment has been, and continues to be, the central component in adult life. It is not only a pathway to economic self-sufficiency, but it is also the gateway to social inclusion for Americans. For persons with intellectual disabilities, as has been noted in prior sections of this report, there are limited opportunities to achieve a higher level of economic self-sufficiency and increased social interactions through employment. Such limitations have an impact on current levels of activity and economic self sufficiency, and foster long-term dependence upon public resources for supports and services. Due to the unemployment rate of almost 90 percent among youth and adults with intellectual disabilities, it is clear that a social-economic safety net is needed to help to maintain and to support them and their families. [Full report available at website]

Administration on Aging

http://www.aoa.gov

11. Beginning January 1, 2005, Medicare covers a one-time review of an individual's health, as well as education and counseling about the preventive services needed, and includes tests for cholesterol, lipid, and triglyceride levels every five years; and, tests to check for diabetes if you have any of the following risk factors: high blood pressure, dyslipidemia (history of abnormal cholesterol and tryglyceride levels), obesity, or a history of high blood sugar. [See the online ***Guide to Medicare's Preventive Services*** (CMS Pub. No. 10110)]

Agency for Healthcare Research and Quality

http://www.ahrq.gov

12. The **Translating Research Into Practice (TRIP)** conference, July 18-20, 2005 (See Calendar of Events, Section I, this edition) will highlight two challenging areas for TRIP: obesity and health disparities reduction. The conference, the third of a series, will continue to provide an opportunity to share innovative TRIP research and implementation methods, case studies and other experiences. TRIP-II joins a number of AHRQ initiatives addressing various conditions- such as diabetes and cardiovascular disease- that disproportionately affect minority populations. Past research has identified important clinical areas in which gaps in health care exist. Eliminating disparities requires enhanced efforts at preventing disease, promoting health, and delivering appropriate care. Several TRIP-II projects are evaluating how implementation methods and tools affect the health outcomes of minority populations in several clinical areas.

Centers for Disease Control and Prevention

[Includes the Agency for Toxic Substances and Disease Registry (ATSDR), in CDC's National Center for Environmental Health]

http://www.cdc.gov

13. The **54th Annual Epidemic Intelligence Service (EIS) Conference** will be held April 11-15, 2005, in Atlanta, GA. The primary purpose of the EIS Conference is to provide current EIS officers a training experience for making scientific presentations. Additional purposes include 1) providing an opportunity for scientific exchange regarding current epidemiologic topics; 2) highlighting the breadth of epidemiologic activities at CDC; 3) providing a setting for strengthening the EIS professional network among new, current, and former EIS officers; and 4) providing a forum for CDC programs to recruit new EIS officers [See EIS conference website at: http://www.cdc.gov/eis/conference/conference.htm; Contact: Erica Lowe at Elowe@cdc.gov for all questions and preliminary conference program]

Centers for Medicare and Medicaid Services

http://cms.hhs.gov

14. **Rural Health Clinics (RHCs)** are clinics that are located in areas that are designated both by the Bureau of the Census as rural and by the Secretary of DHHS as medically underserved. **Federally Qualified Health Centers (FQHC)** services consist of services that are similar to those provided in rural health clinics (RHC) but also include preventive primary services, as described in Chapter 13 of the Medicare Benefit Policy Manual. [See: online Medicare Claims Processing Manual, Chapter 9-Rural Health Clinics/Federally Qualified Health Centers]

Food and Drug Administration

http://www.fda.gov

15. **2005 FDA Science Forum, *FDA Science: Advancing Public Health through Innovative Science***, April 27-28, 2005 (see Calendar of events, this edition). This is the only forum where scientists from all disciplines and organizational components of FDA meet to share data, knowledge, and ideas on the science-based mission of the Agency. The Science Forum also features presentations by leaders of the academic and public health communities, and thereby provides an excellent environment for the open discussion of emerging science, technology, and methodologies, as well as how they can be used to meet the Nation's public health needs.

Health Resources and Services Administration

http://www.hrsa.gov

16. **HRSA's Targeted Health Disparity Activities**. HRSA recognizes that access to health care services alone will not eliminate health disparities in the U.S. Access to health care services does not address many factors that impact health disparities, such as population-specific differences in risk factors for illness, lack of prevention messages with a specific clinical or population focus, biases of the health care system towards women and people of color, and inadequate utilization of self-care principles and health promoting services by vulnerable populations. In response, HRSA has implemented targeted clinical and crosscutting health disparity activities as a means of eliminating the unequal burden of disease among various populations. Many of HRSA's targeted health disparity activities are related to the clinical areas of Healthy People 2010 and the 1998 Initiative for the Elimination of Racial/Ethnic Disparities in Health of the Federal Department of Health and Human Services: Diabetes, Cardiovascular disease, Infant Mortality (IM), HIV/AIDS, Cancer screening and management, and Immunizations.

Indian Health Service

http://www.ihs.gov

17. **IHS Electronic Health Record Website**. These pages will introduce you to the Indian Health Service's latest medical software application, the IHS Electronic Health Record (EHR). The site is designed primarily for IHS, Tribal, and Urban (I/T/U) Indian health care facilities that are actively involved in implementation of IHS-EHR, or are contemplating doing so in the near future. It provides a variety of information about the IHS EHR product, as well as links to a number of helpful documents.

National Institutes of Health

http://www.nih.gov

18. **Mothers' Exposure to Air Pollutants Linked to Chromosome Damage in Babies**. A new study of 60 newborns in New York City reveals that exposure of expectant mothers to combustion-related urban air pollution may alter the structure of babies' chromosomes while in the womb. While previous experiments have linked such genetic alterations to an increased risk of leukemia and other cancers, much larger studies would be required to determine the precise increase in risk as these children reach adulthood.

The air pollutants considered in this study include emissions from cars, trucks, bus engines, residential heating, power generation and tobacco smoking. These pollutants can cross the placenta and reach the fetus.

The study was funded by the National Institute of Environmental Health Sciences, part of the National Institutes of Health, the U.S. Environmental Protection Agency, and other private foundations. The research was conducted by scientists from the Columbia University Center for Children's Environmental Health. [Study results will be published in the February issue of Cancer Epidemiology Biomarkers and Prevention, and are available online at http://cebp.aacrjournals.org; Contact: John Peterson, public affairs specialist with the NIEHS Office of Communications, at (919) 541-7860]

Substance Abuse and Mental Health Services Administration
http://www.samhsa.gov

19. **SAMHSA Grants: $20.6 Million for Prevention of HIV/AIDS**. To help prevent substance abuse and HIV/AIDS among minority populations in high-risk areas, SAMHSA recently released a Notice of Funding Availability (NOFA) for Fiscal Year 2005 to fund 59 to 82 cooperative agreements. These grants will help prevent the onset of substance abuse, and as well the transmission of HIV/AIDS and hepatitis, among communities across the Nation. Applications for these grants (SP 05-001) are available from the SAMHSA Web site and the application due date is **March 17, 2005**.

C. Historically Black Colleges and Universities (HBCUs), Hispanic Association of Colleges and Universities (HACUs), and Other Minority Health news [A listing of HBCUs and HACUs may be found at the following websites http://www.smart.net/~pope/hbcu/hbculist.htm and https://www.hnip.net]

20. Indian Country Crime Statistics Released: Show Disturbing Trend. In December of 2004, the U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, released a statistical profile on **"American Indians and Crime"** with data gathered between 1992 through 2002. The statistics have shown that from 1995 to 2002, the homicide rate of American Indians has decreased by about 45 percent. However, the rate of violent crimes experienced by American Indians is quite disturbing considering the fact that **American Indians are almost twice as likely to be the victim of violent crime compared to the rest of the U.S. resident population**. The main perpetrator of violent crime against American Indians was identified as white (60%). In addition, the American Indian victim was more likely to be victimized by a stranger or acquaintance as opposed to an intimate partner or family member. There was some discussion of tribal law enforcement and tribal jails in the statistical profile. [See: National Congress of American Indians, January 04, 2005, Broadcast #05-002, at http://www.ncai.org]

21. The **GIS Indigenous Mapping Conference**, sponsored and coordinated by Cherokee Nation GIS and the University of Oklahoma, will be held March 8-11, 2005, in Tulsa OK. The purpose of the conference is to: Bring together a forum of tribal people interested in mapping; Provide a Mapping and GIS orientation to Non-GIS, Non-Mapping Tribal people; Share mapping stories and solutions to Tribal specific problems; Facilitation of a discussion of strengthening and expanding the existing network of Tribal Mapping; and, Provide public participation GIS training for tribal people.

The goals are to offer speakers that can provide presentation on mapping for the Advocacy and Empowerment of Tribal peoples; Mapping for Empowerment-Demonstrate how mapping can be used to influence or assist one's own people or communities; Mapping for Advocacy-Demonstrate how mapping can be used to influence audiences and decisions makers outside of the Tribal people and community; and, Develop short term and long term action items to address the future of the Intertribal GIS Council, strengthen the United States network of Tribal mappers, work with an International Network of Indigenous mappers, and if an interest exists, develop a Regional consortium of Tribal mappers. [See: http://www.cherokee.org/extras/events/gis]

D. Other Related Agency or GIS News

22. Global Health Summit, June 5, 2005, Philadelphia PA: Join U.S. Surgeon General Richard Carmona and an array of distinguished international public health leaders for the **2005 Global Health Summit**, which will feature the unveiling of the Surgeon General's Call to Action on Global Health-a preface to his upcoming ***Report on Global Health***. The primary purpose of the Summit is to seek individual and organizational input that will assist in the development of the *Report on Global Health* and also to seek advice on needed collaborative action by national and international stakeholders in advancing the health of the citizens of the world community. Key issues covered will include: International Safety; Maternal and Child Health; Chronic Disease; Environmental Health; Priority Health Problems and Disparities; Health of Transient Populations; Mental Health and Individual Behavior; Infectious Disease; Indigenous and Multi-Cultural Populations; Self-Help Programs; Social Equity; and, Economic Impact of Global Health. [Note: the 40th Annual Public Health Professional Conference, June 6-10, 2005, will follow the Summit; See: http://www.globalhealthsummit.org]

23. The Open Geospatial Consortium Inc. (OGC) invites additional participation in a **Web Processing Service Interoperability Experiment** to test and refine a draft

implementation specification that enables geoprocessing via the Internet. The draft specification is described in the Web Processing Service (WPS) Discussion Paper. This specification can be used to implement any kind of geospatial calculation or model as a web service, so that it can easily be found and invoked by a client. The experiment will refine the OGC WPS interface by implementing several example services and clients to ensure that the specification addresses the complete range of functionality required to identify the data required, initiate the calculation, and manage the outputs so that they can be accessed by the client. [The discussion paper is at http://www.opengeospatial.org/specs/?page=discussion]

24. BioMedware, an Ann Arbor software research and development firm, was recently awarded a substantial grant by the National Cancer Institute. This project, entitled **"Simulation Algorithms for Spatial Pattern Recognition"** will continue to develop software and statistical techniques for the analysis of trends and detection of anomalies in cancer incidence and mortality. The project is nick-named the "Neutral Models" project, and its main focus is in providing a more realistic standard of comparison for assessing unusual health patterns. [Contact individual: Dunrie Greiling at dunrie@biomedware.com]

III. GIS Outreach

[Editor: All requests for Public Health GIS User Group assistance are welcomed; readers are encouraged to respond directly to colleagues]

Geocoding Rural Addresses. Please find below responses from Dr. Gerry Rushton, Department of Geography, University of Iowa, to several questions about the challenging topic of geocoding rural addresses. If any readers have different responses to the questions, please send those responses for consideration for a future edition of *Public Health GIS News and Information.* [Editor: Dr. Rushton will be the keynote speaker at the "GIS and Public Health Day," April 19, 2005, sponsored by the Center for Public Health Preparedness, University at Albany School of Public Health. His topic is "The Promises and the Challenges of Applying Geographic Information Systems in Public Health"; see full program http://www.ualbanycphp.org/Events/GISDay_04_19_05/GISDay_04_19_05.htm]

(1). Would it be possible for a medical admissions or medical clinic clerk to assign a "census block" code to each rural address (when the clerk was talking to a patient to collect address information)? Dr. Rushton*:* I don't think this is a realistic possibility. People don't know their Census Block and it isn't feasible to supply every clerk with a map with sufficient detail for a person to locate themselves. People would have difficulty reading a typical base map with census blocks identified. More important is to have people give their full and complete residential address. Are E911 addresses not yet complete for all rural areas of the country? Maybe not. I believe they are now complete in Iowa. Every rural person ought to be able to give their complete and official E911 address. Last month one of my research assistants processed approximately 11,000 patient billing addresses covering one rural Iowa County supplied to the Iowa Department of Public Health (all names and health information was removed for privacy purposes). I can share with you a report on how many of them could be matched to the E911 master address list for the County and how many could not.

(2). Would assignment of a "census block code" to each case solve the problem of patients with "rural route" or "PO Box addresses"? Dr. Rushton*:* For many public health uses the census block code would be adequate; for some other purposes, however, it would not. For the above project, for example, which is a CDC environmental health tracking award to Iowa Dept of Public Health, the location of the rural residence is needed to measure local exposure to environmental pollutants. We found that the E911 address location was defined as the coordinate location that would lead a prudent person responding to an emergency call to locate the source of the phone call. Locally, that was defined as the location where the public highway met the private road that led to the residence. We did a small sample of rural residences and found that the average distance from this E911 location and the middle of the house footprint was 500 feet. At this point in this particular project we believe we have the location of the middle of the footprint of every rural residence in this county. There are about 4,000 rural households in this County.

(3). Is there any software currently commercially available that might facilitate the assignment of a census block code, or is this something that would need to be developed in each state--for example, by developing a Microsoft Access database with a "look-up table"--this is the census block code for Ranch X? Dr. Rushton. The U.S. Census obviously has software that puts every Census response into its Census Block. Doesn't "Landview" do this? I'd like to know the

definitive answer to this question. We have gone round and round on how exactly these Census units are assigned. Almost all the literature says, "using the point-in-polygon GIS function" but that answer begs far more questions than it answers because it takes you into "which Census boundary files were used?" "What about the geometrical inaccuracies in Census boundary files?" The Census website is quite unhelpful in that it implies the use of point-in-polygon approaches when it states "do not use cartographic boundary files," when geocoding to Census areas.

(4) What is the most useful geographic unit for rural area analyses? For example, are census blocks useful for "rural area" analyses (e.g., cancer incidence rates)? Or, are some census blocks so large (cover so many square miles) that the census block unit would not be very useful? This is not an easy question to answer. For cancer incidence rates it is important to link cancer incidences to base population characteristics, such as gender, race and age. While these are available for Census Blocks, in most cases these values have been permuted to ensure confidentiality and therefore are suspect for use in computing cancer incidence rates. This leads me to think that Block Groups are more useful for computing cancer incidence rates since we can be more confident of the accuracy of their detailed population characteristics. But even at this level, permutation of characteristics occurs. The Census technical reports on this permuting is distinctly unhelpful since it quickly tells you that the algorithm is a secret that will not be divulged and is known only to Census Personnel who have been certified as having the "need to know"! This is to avoid the problem of the sleuth who, knowing the characteristics of the masking algorithm, might reconstruct confidential information from the published data. [Many thanks are extended to Dr. Rushton for his insights on this topic and willingness to share his thoughts. He may be reached at gerard-rushton@uiowa.edu]

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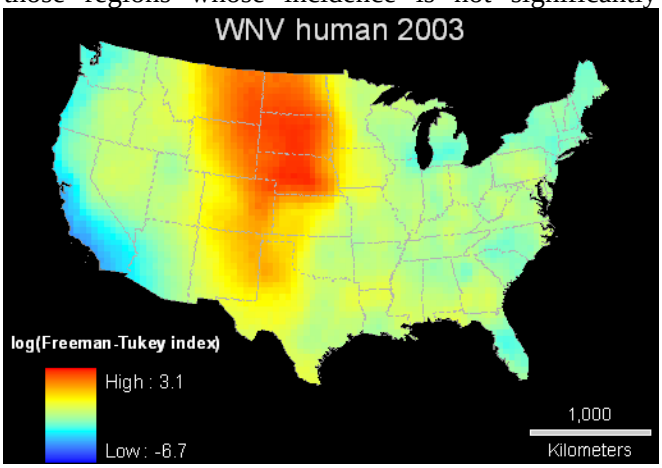
IV. Public Health GIS Presentations and Literature

NCHS/CDC

Cartography and GIS Guest Lecture Series

"Bayesian Modeling of Event Risk Surfaces," Lee De Cola, PhD, MCP, Research Geographer and Mathematician, U.S. Geological Survey, and Adjunct Professor, George Mason and Georgetown Universities. Join us **March 31, 2005, starting 2:00PM (EST), RM 1404, at NCHS!** Abstract: A fundamental spatial analytical problem in biomedicine is the characterization of conditions of such regions as tissues, organisms, and ecosystems. I begin with a set of regions for which events occurring on a denominator population have been recorded. I then compute incidence as well as a simple transformation that is generally normal and that can be kriged to provide a surface. A Bayesian filter removes those regions whose incidence is not significantly



different from zero and the remainder are used as the basis for a kriged risk surface that more reliably models the field representing where the condition is likely to be found and to be intense. The technique is illustrated for human cases of West Nile fever reported at the U.S. county level in 2003, and it can be applied to generate disease atlas maps, online animations, and spatial surveillance forecasts.

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CDC's *Emerging Infectious Diseases, MMWR* and *Preventing Chronic Disease*

(1)Emerging Infectious Diseases

Emerging Infectious Diseases (EID) is indexed in Index Medicus/Medline, Current Contents, Exerpta Medica, and other databases. EID is part of CDC's plan for combating emerging infectious diseases; one of the main goals of CDC's plan is to enhance communication of public health information about emerging diseases so that prevention measures can be implemented without delay. The February 11(2) and March 11(3) 2005 editions of EID are online. The latter includes articles on the risk of disease from foods, in England and Wales, 1996-2000, and a variety of articles and dispatches vector-borne-diseases. [http://www.cdc.gov/ncidod/EID/index.htm]

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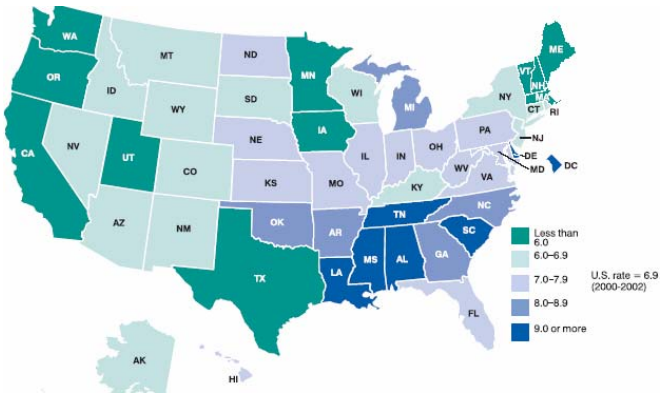
(2) Morbidity and Mortality Weekly Report

Selected articles from CDC's ***Morbidity and Mortality Weekly Report*** (MMWR): [Readers may subscribe to MMWR and other CDC reports, without cost, at site http://www.cdc.gov/subscribe.html as well as access the MMWR online at website http://www.cdc.gov/mmwr]. Note: Efforts are made to include themes which may lend themselves to spatial distribution.] Vol. **54(7)**. Hypothermia-Related Deaths, United States, 2003-2004; Vol. **54(6)**: Nonfatal Motor-Vehicle--Related Backover Injuries Among Children, United States, 2001-2003; Measuring Exposure to an Elemental Mercury Spill, Dakota County, Minnesota, 2004; Vol. **54(5)**: Racial/Ethnic and Socioeconomic Disparities in Multiple Risk Factors for Heart Disease and Stroke, United States, 2003; Disparities in Screening for and Awareness of High Blood Cholesterol, United States, 1999-2002; Infant



Mortality Rates, by Selected Racial/Ethnic Populations, United States, 2002; Vol. **54 (SS-1)**- Cryptosporidiosis Surveillance, United States 1999-2002; Vol. **54(3)**- Rapid Health Response, Assessment, and Surveillance After a Tsunami, Thailand, 2004-2005; Percentage of Persons Who Lacked Health Insurance Coverage for More Than 1 Year, by Race/Ethnicity, United States, January-June 2004

(3) Preventing Chronic Disease

The special focus for the January 2005 (vol. 2) issue is on the Border Health Strategic Initiative (*Border Health ¡SI!)* along the U.S.-Mexico border in Arizona. [See PCD site: http://www.cdc.gov/pcd/issues/2005/jan/toc.htm]

Titles

Assessing spatial and nonspatial factors for healthcare access: towards an integrated approach to defining health professional shortage areas, Wang F and LuoW, *Health & Place* 11(2) JUN 2005;

Mapping and visualizing the location HIV service providers: An exploratory spatial analysis of Toronto neighborhoods, Fulcher C, Kaukinen C, *Aids Care* 17(3): 386-396 APR 2005;

Racial residential segregation and geographic heterogeneity in black/white disparity in poor self-rated health in the US: a multilevel statistical analysis, Subramanian SV, Acevedo-Garcia D, and Osypuk TL, *Soc Sci Med* 60(8) APR 2005;

Social capital, geography and health: a small-area analysis for England, Mohan J, Twigg L, Barnard S and Jones K, *Soc Sci Med* 60 (6)MAR 2005;

Inequity and inequality in the use of health care in England: an empirical investigation, Morris S, Sutton M and Gravelle H, *Soc Sci Med* 60(6) MAR 2005;

From wealth to health: modelling the distribution of income per capita at the sub-national level using night-time light imagery, Ebener S, Murray C, Tandon A and Elvidge, CC, *Int J Health Geogr* 4(5) FEB 2005;

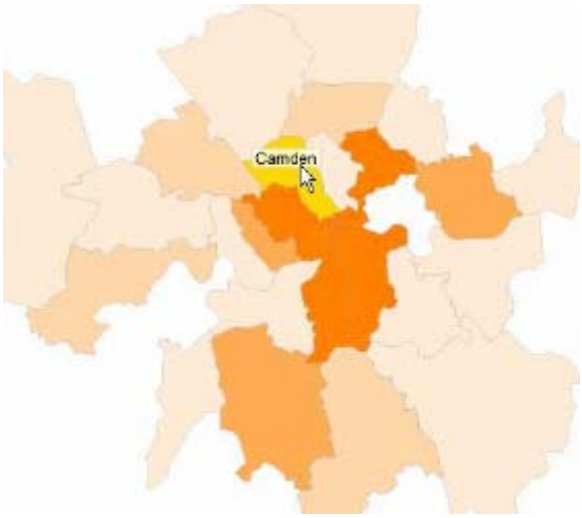
Ecological complexity and West Nile Virus-Perspectives on improving public health response, Rainham DGC, *Can J Public Health* 96 (1): 37-40 JAN-FEB 2005;

Complexity theory and geographies of health: a critical assessment, Gatrell AC, *Soc Sci Med* 60 JAN 2005;

Particulate air pollution, social confounders, and mortality in small areas of an industrial city, Jerrett M, Buzzelli M, Burnett RT and DeLuca PF, *Soc Sci Med* (in press) January JAN 005;

A model of underlying socioeconomic vulnerability in human populations: evidence from variability in population health and implications for public health, Galea S, Ahern J and Karpati A, *Soc Sci Med* 60 JAN 2005;

Web GIS in practice II: interactive SVG maps of diagnoses of sexually transmitted diseases by Primary Care Trust in London, 1997–2003, Maged N Kamel



Boulos MNK, Russell C and Smith M, *Inter J Health Geogr* 2005 4(4) JAN 2005;

Geographic identification of high gonorrhea transmission areas in Baltimore, Maryland, Jennings JM, Curriero FC, Celentano D, Ellen JM, *Am J Epidemiol* 161 (1): 73-80 JAN 1 2005;

A Comparison of the Posterior Choropleth Maps for Disease Mapping, Nandram B, Liu J and Choi JW, *J Data Sci* 3(1) JAN 2005;

Area variation in mortality in Tasmania (Australia): the contributions of socioeconomic disadvantage, social capital and geographic remoteness, Turrell G, Kavanagh A and Subramanian SV, *Health & Place* JAN 2005;

GIS modeling of air toxics releases from TRI-reporting and non-TRI-reporting facilities: Impacts for environmental justice, Dolinoy DC, Miranda ML, *Environ Health Persp* 112 (17): 1717-1724 DEC 2004;

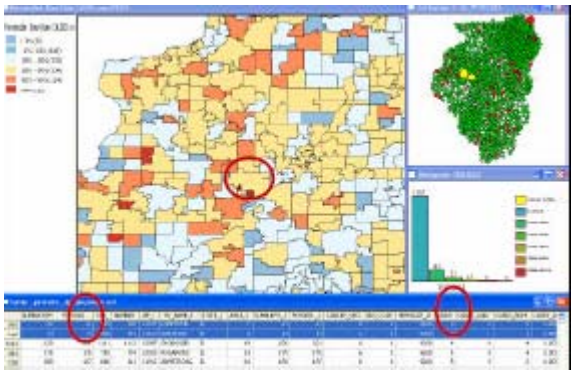
The effects of the World Trade Center event on birth outcomes among term deliveries at three lower Manhattan hospitals, Lederman SA, Rauh V, Weiss L, Stein JL, Hoepner LA, Becker M, Perera FP, *Environ Health Persp* 112 (17): 1772-1778 DEC 2004;

Mapping the risk to groundwater resources from farm waste stores in England and Wales, Armstrong A, Rutter H, Gooddy D, Lyons H, *Q J Eng Geol Hydroge* 37: 293-300 Part 4 NOV 2004;

Risk analysis for road and rail transport of hazardous materials: a GIS approach, Bubbico R, Di Cave S, Mazzarotta B, *J Loss Prevent Proc* 17 (6): 483-488 NOV 2004.

GIS and Cancer Research

"Prostate Cancer Exploratory Spatial Data Analysis (ESDA) and Spatial Statistics." Below are selected web pages for the Association of Teachers of Preventive Medicine (ATPM)/Centers for Disease Control and Prevention (CDC) cooperative agreement TS-1125 on GIS and prostate cancer. The Principal Investigator is Luc Anselin, University of Illinois at Urbana Champaign.



Project Overview. This project is a three-year research project funded by the Association of Teachers of Preventive Medicine/the Centers for Disease Control Cooperative Agreement Subawards Program (TS-1125). The overall objective of the proposed research is to develop, evaluate and implement a collection of analytical tools that explicitly leverage geographic information to assist state Comprehensive Cancer Control (CCC) programs in the identification of interesting patterns in prostate cancer incidence and mortality, their visualization and their explanation in terms of public health, environmental and socio-economic indicators at different spatial scales. The development consists of identifying current gaps in the state of the art of techniques and methodology, specifically as they apply to the identification and modeling of space-time patterns. [See: http://sal.agecon.uiuc.edu/projects_main.php#open]

Review of Existing Research. The following links access 15 short reviews of recent articles in the areas of GIS, spatial analysis and health. The reviews place a particular emphasis on the software and methodologies used by the authors, under the headings: Health-Related

Clusters and Geographic Patterns; Health Care Access and Utilization; and Health & Spatial Analysis: Method Issues. [http://sal.agecon.uiuc.edu/projects_ts1125.php#research]

Cancer Registries with Special Online Prostate Cancer Data. Most states publish reports that contain county-level data for prostate cancer incident and/or mortality rates. Several states publish additional prostate cancer data online. Selected states with interactive data and/or mapping systems, with sub-county level data, or race- and county-specific prostate data are listed at this site. [See: http://sal.agecon.uiuc.edu/projects_data.php]

Other Related and Supporting Websites. "Exploring spatial clusters and outliers in prostate cancer rates," a slide presentation by Luc Anselin [See website: http://sal.agecon.uiuc.edu/pdf/LA_iowa.pdf]; See "Exploring Spatial Public Health Data with GeoDa," an online slide presentation by the Spatial Analysis Lab, University of Illinois at Urbana-Champaign, USA [See slide website: http://sal.agecon.uiuc.edu/pdf/geohealth2004.pdf]; and also "Exploratory Spatial Data Analysis (ESDA) and spatial statistical methods for prostate cancer for use by state-based Comprehensive Cancer Control (CCC) programs," Penn State University's GeoVISTA data visualization program [http://www.geovista.psu.edu/grants/cdcesda/feature.html]. Editor: a complete and revised version of the GeoDa workbook, "Exploring Spatial Data with GeoDa™: A

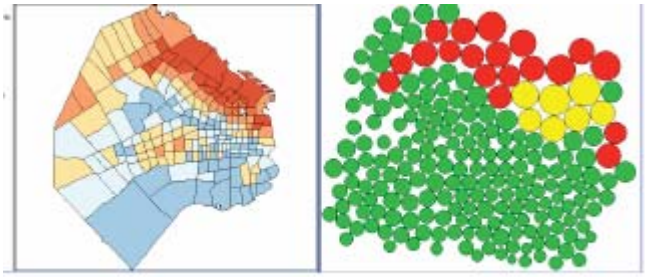


Figure 11.12: Linked cartogram and box map for APR.

Workbook," by Luc Anselin, is now available for download at http://sal.agecon.uiuc.edu/csiss/pdf/geodaworkbook.pdf.

Special Report

Undoing Racism in Public Health: A Blueprint for Action in Urban MCH, Barnes-Josiah, D.L., (2004). Omaha, NE: CityMatCH at the University of Nebraska Medical Center [Excerpts]. Eliminating health disparities remains an identified strategic priority of CityMatCH. This examination of the scientific basis for racism and its role in health status and health disparities and how institutional racism manifests in health care and health departments, the overview of current efforts to ameliorate or undo racism and the series of proposed activities for a local public health initiative to undo racism are offered to you as both invitation and challenge to action. While this report only scratches the surface of the problem, we hope this begins discussion that will ultimately lead to action.

Eliminating racial and ethnic disparities is a sustained, strategic priority in CityMatCH's work with nearly 150 member local health departments whose jurisdictions include the largest 200 cities and major metropolitan areas in the nation. The CityMatCH Board of Directors has committed the organization to assist those members in undoing racism efforts. Members have specifically requested guidance and tools for initiatives in their own departments. A 2000 National Association of City and County Health Officials (NACCHO) and CityMatCH "Survey of MCH in Local Health Departments" showed that among 123 responding urban health departments (83% of CityMatCH members), reducing racial and ethnic disparities was a high priority. However, only 39% reported being adequately prepared to address institutional racism and less than 10% had chosen to directly take on larger systemic and social issues such as poverty and housing. Members asked CityMatCH to help them start, and stay the course, to undo racism-beginning with their own institutions.

This report is an initial answer to those requests. Its three main sections: • Examine the scientific basis for racism as a determinant of health status and health disparities, and institutional racism manifests in health care and health departments; • Provide an overview of existing directions, options and resources for "Undoing Racism;" and, • Outline a series of activities for a local public health-based Undoing Racism initiative, ranging from awareness to action. [See full report at citymatch site: http://www.citymatch.org]

New Report

The **Welfare, Children, and Families Study**, commonly called the **Three-City Study**, is a longitudinal household survey intended to track the well-being of a group of low-income families with children in the wake of welfare reform in the United States. The families were drawn from low and moderate income neighborhoods in three cities-Boston, Chicago, and San Antonio-and were first interviewed in 1999 and then again in 2000-2001. The population of inference is children age birth to 4 and 10 to 14 who have a female primary caregiver, whose

caregivers self-identify as non-Hispanic white, non-Hispanic African-American, or Hispanic of any race, and who live in families with incomes below 200 percent of the poverty line, living in low-income neighborhoods in Boston, Chicago, or San Antonio.

The purpose of the study was to investigate the consequences of policy changes resulting from the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). The survey was designed to provide information on the health, cognitive, behavioral, and emotional development of children and on their primary caregivers' labor force behavior, welfare experiences, family lives, use of social service, health, and well-being. About 2,400 families were interviewed in the first wave. Most were single-mother families but a few married families with children were included as well.

Online papers include: "The Three-City Study Incentive Experiment: Results from the First Two Waves," Robert Moffitt, Johns Hopkins U; "The Consequences of Welfare Reform for Child Well-Being: What Have We Learned So Far and What are the Policy Implications?" Andrew Cherlin, Johns Hopkins U; "After Welfare Reform: A Snapshot of Low-Income Families in Boston," principal investigators Ronald Angel, U Texas at Austin; Linda Burton, Pennsylvania State U; P. Lindsay Chase-Lansdale, Northwestern U, Andrew Cherlin; and William Julius Wilson, Harvard University; "Does It Pay to Move From Welfare to Work? Reply to Robert Moffitt and Katie Winder," Sheldon Danziger, U Michigan and Hui-chen Wang, U Mississippi; "Does it Pay to Move from Welfare to Work? A Comment on Danziger, Heflin, Corcoran, Oltmans, and Wang," Robert A. Moffitt and Katie Winder, Johns Hopkins U; "Explaining Disparate Findings on from the Three-City and the MDRC Next Generation Studies on the Employment and Welfare Impacts on Children and Adolescents," Robert Moffitt, P. Lindsay Chase-Lansdale, and Andrew Cherlin. [A large number of reports and publications, and data, have resulted from the project; see details at http://www.jhu.edu/~welfare]

New Report

New and sophisticated methods for studying the relationship between human genetic differences, the environment, health and behavior, all made possible by the completion of the Human Genome Project, have made traditional race-based measurements of human differences obsolete, according to numerous authors writing in a special issue of the *American Psychologist* devoted to **Genes, Race, and Psychology in the Genome Era** (January, 2005).

In a series of articles, leading researchers discuss racial health disparities and the controversial area of intelligence, while also carefully outlining specific instances and ways in which researchers should measure or use race. According to the authors, such research requires a careful examination of both environmental and genetic factors, as well as conceptually sound and methodologically rigorous measures of race at a level not yet universal in all research. The special issue also looks at the construct of race in the 21st century, as well as the historical use of the construct in science, including issues of new genetic markers for race vs. self-reported race, racial vs. ancestral identity, racial disparities, and the interaction between genes and the environment. In separate articles, other authors discuss the long-standing and controversial examination of race and intelligence. The backdrop for each of the articles is the high expectation that the completion of the Human Genome Project will lead to dramatic advances in our understanding of health and behavior.

Articles include: **Genes, Race, and Psychology in the Genome Era: An Introduction**, NB Anderson and KJ Nickerson, American Psychological Association; **Race and Ethnicity in the Genome Era: The Complexity of the Constructs**, VL Bonham, E Warshauer-Baker, and FS Collins, National Institutes of Health; **Race as Biology Is Fiction, Racism as a Social Problem Is Real: Anthropological and Historical Perspectives on the Social Construction of Race**, A Smedley, Virginia Commonwealth U, and BD Smedley, Institute of Medicine; **The Meaning of Race in Psychology and How to Change It: A Methodological Perspective**, JE Helms, M Jernigan, and J Mascher, Boston College; **In the Eye of the Storm: Race and Genomics Research and Practice**, VO Wang, National Human Genome Research Institute, National Institutes of Health and S Sue, U California, Davis; **Intelligence, Race, and Genetics**, RJ Sternberg, EL Grigorenko, and KK Kidd, Yale U; **Under the Skin: On the Impartial Treatment of Genetic and Environmental Hypotheses of Racial Differences**, DC Rowe (Deceased), U Arizona; **Race and IQ: Molecular Genetics as Deus ex Machina**, RS Cooper, Loyola U Chicago Stritch School of Medicine; **The Use of Race Variables in Genetic**

Studies of Complex Traits and the Goal of Reducing Health Disparities: A Transdisciplinary Perspective, AE Shields, Georgetown U, M Fortun, Rensselaer Polytechnic Institute, EM Hammonds, Harvard U, PA King, Georgetown U Law Center, C Lerman, U Pennsylvania, R Rapp, New York U, and PF Sullivan, U North Carolina at Chapel Hill; **Genes, Environment, and Race: Quantitative Genetic Approaches**, KE Whitfield and G McClearn, Pennsylvania State U; **Race and Genetics: Controversies in Biomedical, Behavioral, and Forensic Sciences**, P Ossorio, U Wisconsin-Madison and T Duster, New York U. [Contacts and inquiries to: Dave Partenheimer, APA, at dpartenheimer@apa.org and Ron Abeles, Office of Behavioral and Social Science Research, OD, National Institutes of Health, at abeles@nih.gov]

V. Related Census, HHS, FGDC and Other Federal/State Developments

CDC Offers Help in Operation Earthquake

Kathy Nellis, *CDC Connects* (excerpts, January 18, 2005)

The severe earthquake and killer tsunamis which spread across the Indian Ocean Basin thousands of miles from CDC headquarters touched off an immediate storm of activity at the agency. The Director's Emergency Operation Center (DEOC), which maintains a 24-hour staffing for CDC, immediately brought in appropriate experts from around CDC to evaluate the situation and began developing plans and identifying resources to respond to the devastating public health emergency. Twelve nations were directly affected by the tsunamis resulting in an estimated 150,000 deaths, hundreds of thousands injured and millions more left displaced or otherwise affected. Millions of people are now under threat of disease outbreaks as a result of limited access to water, food, shelter, and medical care. International governmental and non-governmental agencies are providing supplies, equipment, and personnel as part of a multi-national relief effort. CDC is part of that effort.

What happens when an emergency of this nature occurs? This disaster took place December 26 [2004] and right away the DEOC began organizing behind the scenes. Hundreds of CDC employees volunteered to help, either at the disaster zone or as support at CDC. Staff in Thailand and India headed out into the field, as CDC headquarters waited for requests for help from the host countries and partner international organizations.

CDC can help on a number of fronts. In times of crisis, the agency's trained personnel can conduct rapid health infrastructure damage and other rapid needs assessment. Structural engineers can help ensure the safety of health care facilities. Others conduct infectious disease surveillance, outbreak response, assess injuries, and address issues that will be threats to the survivors. Sanitation is a key concern. Epidemiologists, hygienists, and laboratory personnel provide critical assistance. And there is also a major focus on mental health and psychosocial issues as well as mass trauma recovery.

"It's really the largest major international event that has become a DEOC issue," says Michael Gerber**,** Ph.D., co-lead for the international team. "This is huge. DEOC has been involved in bioterrorism and SARS, of course, but the complexity and massive numbers involved in this disaster have made it a CDC-wide response. I don't recall any other instance where I've seen every CIO so actively involved. We have logistics people, communications specialists, epidemiologists, structural engineers from NIOSH, nutritionists, the list goes on and on. It's an across-the-board response at CDC, hugely diverse."

Because CDC has close working and personal relationships with a number of agencies and because CDC is staffed with so many dedicated and experienced experts in public health, it was a given that CDC staff would be called upon for the disaster relief mission. DEOC is helping to coordinate the agency's response with partners worldwide including WHO, UNICEF, USAID, DHHS, DOD, US Pacific Command, Red Cross/Red Crescent, and the Ministries of Health in the affected countries, especially the Thailand Ministry of Health.

It's a daunting task, not only because of the scope of the devastation, but because of the risks involved. In Thailand, for example, malaria is present in rural and jungle areas throughout the country. Mines present the most significant threat to relief forces operating on the ground or off the northeastern coast of Sri Lanka. Brackish waters carry the risk of *Leptospirosis* and parasitic diseases. Sanitation, already marginal in many areas, has been greatly disrupted in affected areas. Diarrheal disease can be expected to temporarily incapacitate a very high percentage of personnel within days if local, food or water is consumed. Cholera is endemic in Sri Lanka and also found in Indonesia and Thailand. All three countries have poisonous snakes

including cobras which can spit venom. Then there are psychological stresses for response workers from exposure to huge numbers of dead bodies and other factors. The DEOC is concerned with all these issues and with ensuring the health and safety of CDC workers.

It's a complex operation. And CDC's role is likely to be a long, on-going one. International partner agencies are requesting deployments of three to four months at a time. New volunteers will head out as the first groups return. At this point no major disease outbreaks have been reported, although there are complications from injuries including wound infections, tetanus, and long-term/chronic disabilities in some areas.

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Federal Geographic Data Committee (FGDC)

[The Federal Geographic Data Committee (FGDC) is an interagency committee, organized in 1990 under OMB Circular A-16, which promotes the coordinated use, sharing, and dissemination of geospatial data on a national basis. The FGDC is composed of representatives from seventeen Cabinet level and independent federal agencies. The FGDC coordinates the development of the National Spatial Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data. The 19 federal agencies that make up the FGDC, including HHS, are developing the NSDI in cooperation with organizations from state, local and tribal governments, the academic community, and the private sector. See http://www.fgdc.gov]

Geospatial One-Stop Project Awards Portal Contract. The Geospatial One-Stop project has awarded a contract to ESRI of Redlands, Calif., to update www.Geodata.gov, an existing online tool for combining thousands of geospatial resources from federal, state, local, tribal and private sources. The Web site enables decision makers to access geospatial resources and thus respond quickly in an emergency to protect lives, property and basic services. "We look forward to Version 2 being even easier to use than Version 1, with more resources available from federal, state, local and private sources," said Karen Siderelis, U.S. Geological Survey associate director for geospatial information. "With Geodata.gov, together with additional geospatial resources of the U.S. Geological Survey, decisonmakers can do everything from viewing a real-time weather map of the United States to using stream-gauging tools to assess which streams are approaching flood stage, to locating sources of emergency help."

The updated Version 2 will: ·enhance the ease in using geodata.gov for those with less technical experience; ·allow users to take advantage of new search capabilities and include them on their own portal applications; ·maximize interoperability to facilitate sharing of information from multiple sources; and ·allow faster response to search requests and online management of 17 featured subject "channels" that highlight innovative Web services and information sources based on specific subject areas. [Contact: Joan Moody at (202) 208-6416]

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Invitation to National Geospatial Enterprise Architecture Workshop: Attention: Federal Chief Information Officers. The Federal Geographic Data Committee (FGDC) is a nineteen member interagency committee responsible for the coordination of federal digital geographic information activities- with a focus on standards, policies, clearinghouse technology, education and outreach. For your reference, see web link to OMB Circular A-16, which details your agency's role (at:http://www.fgdc.gov/publications/a16/A-16_med_res.pdf), and a list of your representatives is attached below. The FGDC, in collaboration with the Federal CIO Architecture Infrastructure Committee, is initiating discussions on the development of the National Geospatial Enterprise Architecture (NGEA) and its relationship with the broader Federal Enterprise Architecture (FEA). I would like to invite you and your staff to a **March 15, 2005** workshop, hosted by Susan Turnbull, General Services Administration, to be held at the National Science Foundation, Ballston, VA. We will begin to build consensus on principles, definitions and approaches for the NGEA. The workshop, Collaborative Expedition Workshop #39, is one of a monthly series for individuals and policy-makers from all sectors. More information is available on-line at: http://colab.cim3.net/cgi-bin/wiki.pl?ExpeditionWorkshop/TowardaNationalUnifiedGeospatialEA_SeeingtheWayForwardTogether_2005_03_15. A technical follow-up meeting will be held on March 16, at the U.S. Geological Survey, Reston, to scope a strategy to systematically represent geospatial processes and content as part of the FEA. Thank you for your agency's commitment to the FGDC and assistance in accomplishing the important work ahead of us. [Contact: Leslie Armstrong, Deputy Staff Director, Federal Geographic Data Committee, at larmstrong@usgs.gov]

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Recent (selected) Government Accountability Office

(GAO) Reports, 2004

[http://www.gao.gov/docsearch/repandtest.html]

Clean Air Act: Observations on the Environmental Protection Agency's (EPA) Benefit Analysis of Its Mercury Control Options, GAO-05-252, February 28, 2005. Mercury is a toxic element that can cause neurological disorders in children. In January 2004, EPA proposed two options for limiting mercury from power plants, and plans to finalize a rule in March 2005. GAO identified four major shortcomings in the economic analysis underlying EPA's proposed mercury control options that limit its usefulness for informing decision makers about the economic trade-offs of the different policy options.

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Hazardous Waste Sites: Improved Effectiveness of Controls at Sites Could Better Protect the Public, GAO-05-163, January 28, 2005. The Environmental Protection Agency's (EPA) Superfund and Resource Conservation and Recovery Act (RCRA) programs were established to clean up hazardous waste sites. EPA faces challenges in ensuring that institutional controls are adequately implemented, monitored, and enforced. Institutional controls at the Superfund sites GAO reviewed, for example, were often not implemented before the cleanup was completed, as EPA requires. EPA's monitoring of Superfund sites where cleanup has been completed but residual contamination remains often does not include verification that institutional controls are in place. Moreover, the RCRA corrective action program does not include a requirement to monitor sites after cleanups have been completed. In addition, EPA may have difficulties ensuring that the terms of institutional controls can be enforced at some Superfund and RCRA sites: that is, some controls are informational in nature and do not legally limit or restrict use of the property, and, in some cases, state laws may limit the options available to enforce institutional controls.

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2010 Census: Basic Design Has Potential, but Remaining Challenges Need Prompt Resolution, GAO-05-9, January 12, 2005. The initial results of the test suggest that while certain new procedures show promise for improving the cost-effectiveness of the census, the Bureau will have to first address a number of problems that could jeopardize a successful head count. For example, enumerators had little trouble using hand held computers (HHC) to collect household data and remove late mail returns. The computers could reduce the Bureau's reliance on paper questionnaires and maps and thus save money. The test results also suggest that certain refinements the Bureau made to its procedures for counting dormitories, nursing homes, and other "group quarters" could help prevent the miscounting of this population group.

Other aspects of the test did not go as smoothly. For example, security practices for the Bureau's IT systems had weaknesses; the HHCs had problems transmitting data; questionnaire items designed to improve coverage and better capture race/ethnicity confused respondents; enumerators sometimes deviated from prescribed enumeration procedures; and certain features of the test were not fully operational at the time of the test, which hampered the Bureau from fully gauging their performance. With few testing opportunities remaining, it will be important for (1) the Bureau to find the source of these problems, devise cost-effective solutions, and integrate refinements before the next field test scheduled for 2006, and (2) Congress to monitor the Bureau's progress in resolving these issues.

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Health and Human Services' Estimate of Health Care Cost Savings Resulting from the Use of Information Technology, Number GAO-05-309R, February 17, 2005. According to the Institute of Medicine and others, the U.S. health care delivery, system is an information-intensive industry that is complex, inefficient, and highly fragmented, with estimated spending of $1.7 trillion in 2003. The Institute of Medicine has called for transformational change in the health care industry through the use of health information technology (IT) to improve the efficiency and quality of medical care. As a regulator, purchaser, health care provider, and sponsor of research, the Department of Health and Human Services (HHS) has also been working over the years to promote the use of IT in public and private health care settings.

Web Site(s) of Interest for this Edition

http://members.aol.com/johnp71/javastat.html I note that the January 2005 (105) edition of CDC's Behavioral and Social Science Working Group's newsletter references the site **"Web Pages That Perform Statistical Calculations"**. It contains a compiled compendium of hundreds of links to all kinds of free access, online

statistical calculators. The major headings of the table of contents are: Selecting the right kind of analysis; "Online Software" package websites; Calculators, plotters, function integrators, and interactive programming environments; Probability distribution functions: tables, graphs, random number generators; Descriptive statistics, histograms, charts; Confidence intervals, single-population tests; Regression, correlation, least squares curve fitting, non-parametric; Bayesian methods; and other statistical tests and analyses.

http://www.math.yorku.ca/SCS/Gallery/noframes.html
This ***Gallery of Data Visualization*** displays some examples of the **Best and Worst of Statistical Graphics**, with the view that the contrast may be useful, inform current practice, and provide some pointers to both historical and current work. We go from what is arguably the best statistical graphic ever drawn, to the current record-holder for the worst.

http://www.business.otago.ac.nz/infosci/sirc/SIRC2004
SIRC 2004: A Spatio-Temporal Workshop. Hosted by the University of Otago, New Zealand, and organized by Peter Whigham, this is the 16th Annual Colloquiem of the Spatial Information Research Centre (SIRC). The program is now available on the web and the Proceedings of the colloquiem may be obtained from the Director, Spatial Information Research Centre, Department of Information Science, University of Otago, Dunedin NZ. Editors are Peter and colleague Bruce McLennan.

Final Thoughts

Health Disparities: An Unfinished Chapter in Public Health

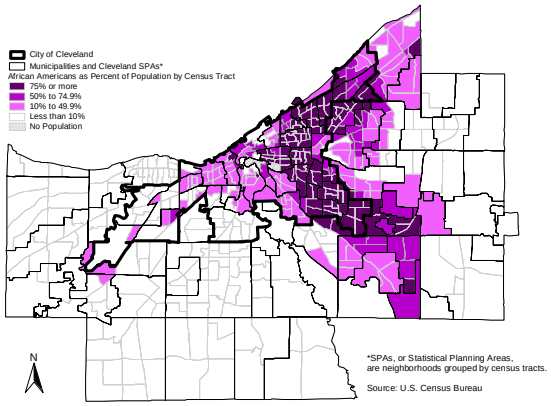
I have always admired Dr. David Satcher, former CDC Director and U.S. Surgeon General, and been honored to be in his presence. In 1996, he presented to me in Atlanta the CDC and ATSDR Honor Award for helping CDC/ATSDR establish a leadership role in understanding and facilitating the application of Geographic Information System technology in public health. Several years later, I had the opportunity to speak with Dr. Satcher following his keynote address at a Public Health Service ceremony honoring the late Dr. Martin Luther King, Jr., in Rockville, Maryland. We spoke briefly about my personal concern that HHS agencies could build better bridges to Historically Black Colleges and Universities (HBCUs) so as to attract and engage talented undergraduate and graduate level minority students to the field of public health.

As you may now know, Dr. Satcher has just published an article about several important health disparities between America's blacks and whites. In the March/April 2005 edition of *Health Affairs* Vol 24(2) (released March 9, 2005 at the National Press Club), Dr. Satcher and co-authors of "What If We Were Equal? A Comparison of the Black-White Mortality Gap in 1960 and 2000" examined trends in black-white standardized mortality ratios (SMRs) for each age-sex group from 1960 to 2000 (see http://content.healthaffairs.org/cgi/content/full/24/2/459). They show that an estimated 83,570 excess black deaths each year (based on 2002 data) could have been prevented in the United States if this black-white mortality gap was eliminated. That is, blacks suffer 40.5 percent more deaths annually than would be expected if they had experienced the mortality rate of whites.

Dr. Satcher's article identifies infant mortality, especially, as one of the dramatic differentials in the black-white health imbalance, much as we have attempted to show through GIS maps in Cleveland Ohio neighborhoods in the last six editions (see http://www.cdc.gov/nchs/gis.htm) of *Public Health GIS News and Information*. Dr. Satcher's team concludes the gap between infant mortality rates of whites and blacks actually worsened between 1960 and 2000 for infants and for African American men age 35 and older. Vital statistics data from CDC's NCHS show an increase in infant mortality rates for all races in 2002, but with the rate significantly higher solely for infants of black mothers (see NCHS website http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_10.pdf).

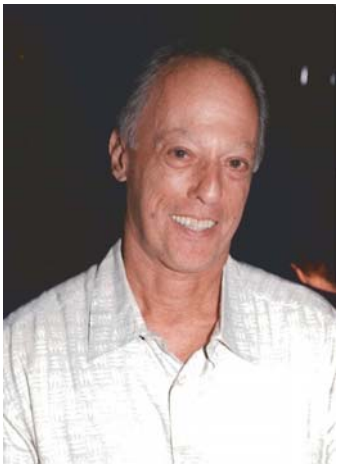
Although the authoritative answer for resolving the infant mortality differential still remains elusive, there are some prominent clues that suggest causation. In the same issue of *Health Affairs*, David Barton Smith writes a commentary on the institutional role (particularly that of the federal government) on the origins and etiology of health disparities entitled

"Racial and Ethnic Health Disparities and the Unfinished Civil Rights Agenda" (see http://content.healthaffairs.org/cgi/content/full/24/2/317). Finally, in the Appendix of this issue of *Public Health GIS News and Information*, I think you will see some connective dots to the problem of access to services in Cleveland's African American neighborhoods. Without good access to good quality care, there seems little doubt that inadequate prenatal, maternal, post-neonatal and infant care portends a strong associative relationship to elevated infant mortality in these communities, particularly for families in poverty and with no health insurance.



Percent African-American Population, Cuyahoga County, Ohio, 2000
(map left)

There are positive signs that, as we move forward, long-standing health inequalities will receive a thorough examination and will change for the better. The National Committee on Vital and Health Statistics, the National Research Council and the Institute of Medicine have directed HHS to take a lead role in this national initiative and Healthy People 2010 named the elimination of health disparities as one of two overriding goals of the nation's public health agenda for this decade.



Charles M. Croner, PhD, Geographer and Survey Statistician, and Editor, ***Public Health GIS News and Information***, Office of Research and Methodology, National Center for Health Statistics, and DHHS Representative, Federal Geographic Data Committee, at cmc2@cdc.gov. Celebrating our **63rd** edition with continuous reporting since **1994.**

The NCHS GIS home page contains current GIS events, archived GIS reports and other GIS links
http://www.cdc.gov/nchs/gis.htm - please join us **March 31, 2005** for another in our GIS lecture series

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APPENDIX: MAPPING HEALTH INEQUALITIES
[Sixth in Series: See also May, July, September, November 2004 and January 2005 editions]

Shortage Areas of Primary Medical Care Professionals

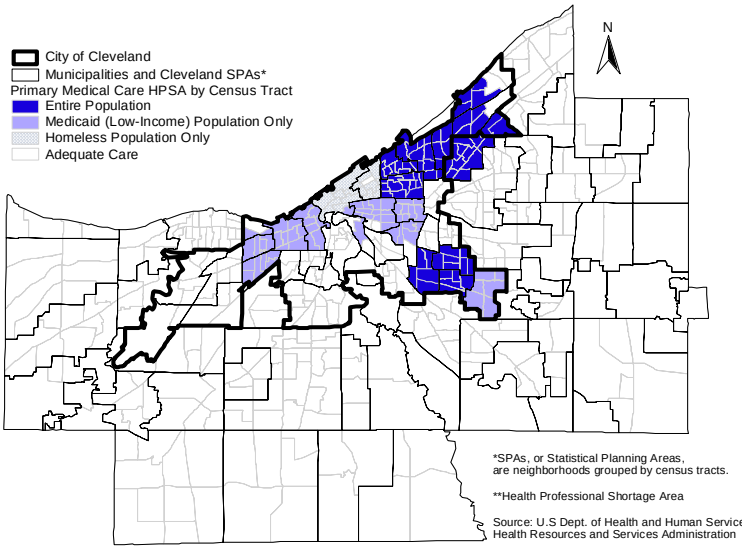
Terry Lenahan, The Center For Community Solutions, Cleveland, Ohio

Access to healthcare services is essential to assure the health of communities. It is particularly important for those population groups without access in the market-driven system: the uninsured and publicly insured, and those isolated by geography, language, culture, or special conditions presenting barriers to access (e.g., homelessness, HIV/AIDS). Lack of access to clinical preventive services (e.g. cancer screening, vaccinations, prenatal care) contributes to racial and ethnic health disparities.

Section 332 of the national Public Health Service Act provides that the U.S. Secretary of Health and Human Services shall designate Health Professional Shortage Areas, or HPSAs, based on criteria established by regulation[1]. About 20 percent of the U.S. population resides in primary medical care HPSAs.

Shortages of primary medical care physicians (general or family practice, general internal medicine, pediatrics, and obstetrics and gynecology) have been designated in 30 percent of Cuyahoga County's 501 census tracts, all located in the cities of Cleveland and East Cleveland, an adjacent, largely African-American suburb. About two-thirds of these shortage areas are found in the mostly Black neighborhoods on the east side of Cleveland. The entire suburb of East Cleveland, which is 93 percent African-American, is considered a HPSA, the only suburban municipality with HPSAs. Of the 382,600 African-Americans in Cuyahoga County, 217,000, or 57 percent, live in HPSAs.

Primary Medical Care Health Professional Shortage Areas, Cuyahoga County, Ohio, 2004 (map right)



Using Ohio Department of Health birth certificate files for 1996 to 2001, the following GIS analysis calculates Cuyahoga County birth statistics for HPSAs and compares them to other geographic areas in the county.

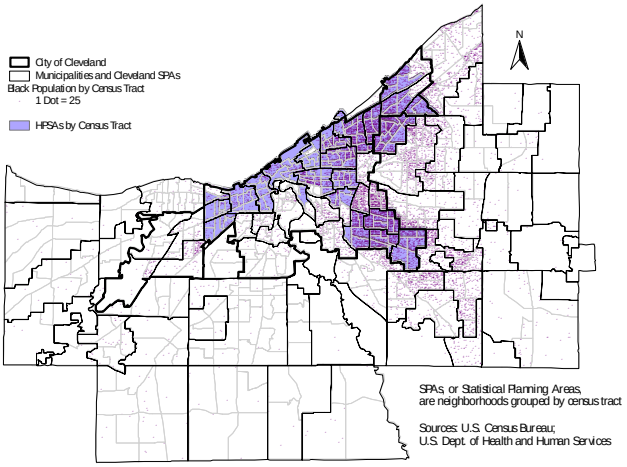
Perhaps no factor is more critical to the physical and social health of a community than the health of its children. Children's health not only affects their immediate well-being, but also their subsequent development and chances to reach full potential as an adult. Premature and low-birth-weight babies have a higher risk of death as well as long-term disability and impaired development. Timely and adequate prenatal care

[1] The authority for designation of HPSAs is delegated to the Health Resources and Services Administration, Bureau of Primary Health Care's Division of Shortage Designation. Criteria and the process used for designation of HPSAs were developed in accordance with the requirements of Section 332. The HPSA criteria require three basic determinations for a geographic area request: (1) the geographic area involved must be rational for the delivery of health services, (2) a specified population-to-practitioner ratio representing shortage must be exceeded within the area, and (3) resources in contiguous areas must be shown to be over-utilized, excessively distant, or otherwise inaccessible.

help ensure the health of mothers and their babies. Late, inadequate, or no prenatal care increases the chance of premature births, low-birth-weight, and infant deaths.

African Americans in Cuyahoga County, Ohio, 2000 with Primary Medical Care HPSAs, Cuyahoga County, 2004

(map left)

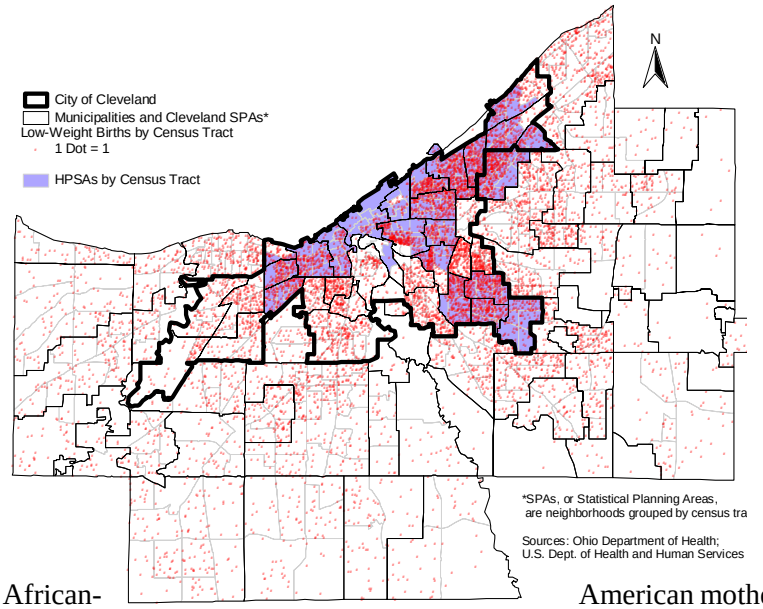


Analysis of births by race at the county level showed more than a quarter of African-American mothers received inadequate prenatal care, almost two-and-a-half times the rate for White mothers[2].

Nearly 14 percent of Cuyahoga County's African-American mothers gave birth to low-weight babies, more than double the rate for White women. The census tract analysis showed 13 percent of all births in HPSAs were low-weight births. In comparison, 9 percent of all births in the county and 7 percent in the suburbs were low-weight births.

Low-Weight Births, Cuyahoga County, 1996 to 2001 Average Annual with Primary Medical Care HPSAs, Cuyahoga County, 2004

(map below)

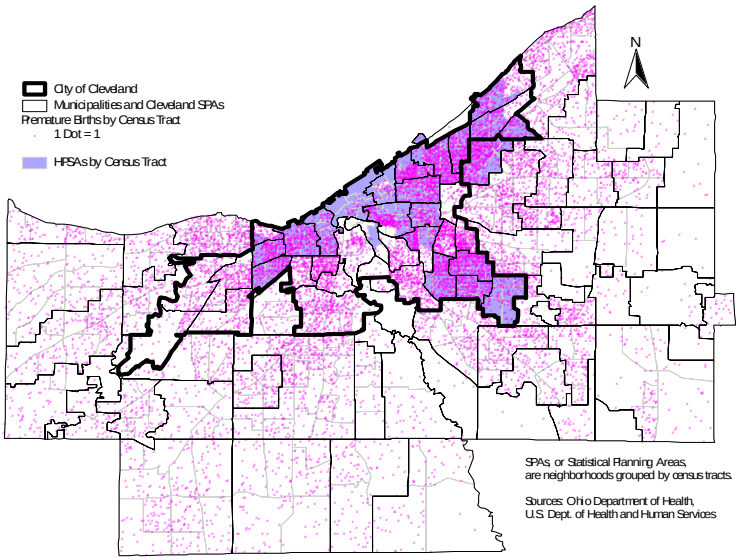


Over 17 percent of African-American mothers in the county gave birth

[2] We did not analyze births by race at the municipality and Statistical Planning Area (or SPA, neighborhoods grouped by census tracts in the city of Cleveland) level because we primarily used rates, which would have resulted in possibly misleading rates for some municipalities or SPAs where there were few births.

prematurely compared to 10 percent of White mothers. The census tract analysis in HPSAs showed 17 percent of all births were premature. In comparison, 13 percent of all county births were premature, and 10 percent were premature in the suburbs.

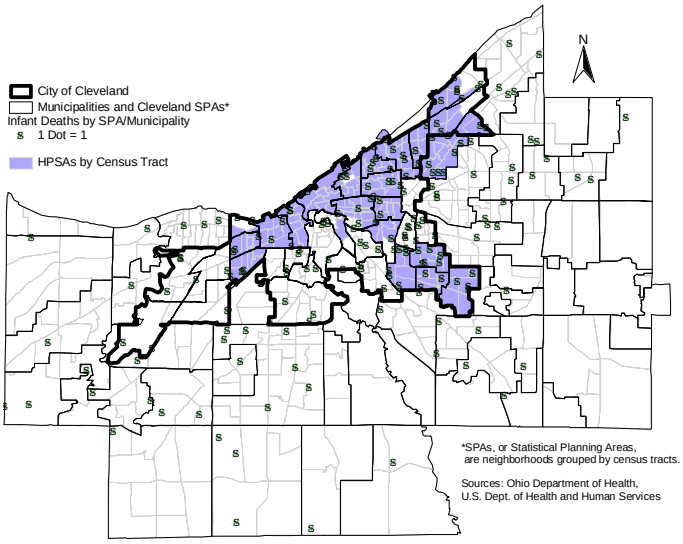
Premature Births, Cuyahoga County, 1996 to 2001 Average Annual with Primary Medical Care HPSAs, Cuyahoga County, 2004 (map below)



While great strides in reducing infant mortality (a death in the first year of life) rates were made over the past century, the United States still lags behind Western Europe and other industrialized countries. Racial disparity persists- the infant mortality rate among babies born to African-American mothers in Cuyahoga County was nearly two-and-a-half times that for White mothers. The infant mortality rate in Cleveland was more than double the national rate.

Of the 501 census tracts in Cuyahoga County, 29 percent were designated as HPSAs, yet 38 percent of infant deaths occurred in these HPSA-designated census tracts. Currently in these HPSAs, there are three community health centers and six government-supported clinic sites that are working to improve the health of children and families.

Infant Deaths, Cuyahoga County, 1997, 1999 to 2001 Average Annual with Primary Medical Care HPSAs, Cuyahoga County, 2004 (map below)



Maps were created by Terry Lenahan, The Center for Community Solutions, Cleveland, Ohio. Data were geocoded to census tract level by: Brian McNamara, GIS specialist, Northern Ohio Data and Information Service at the Maxine Goodman Levin College of Urban Affairs, Cleveland State University. "Shortage Areas of Primary Medical Care Professionals" was one of 37 indicators from *Social Indicators 2003: Community Health* report, jointly published by Community Solutions and United Way Services of Greater Cleveland. The complete report may be seen at Community Solutions' website (www.communitysolutions.com). Contact Terry at tlenahan@communitysolutions.com.