

PUBLIC HEALTH GIS NEWS AND INFORMATION

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

Selected Contents: Events Calendar (pp.1-2); (pp. 8-9); Public Health and GIS Literature 16); Website(s) of Interest (pp. 16-17); Final



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I. Public Health GIS (and related) Events: SPECIAL NCHS/CDC GIS LECTURES

Please join us **December 14, 2005**, for “**An Overview of a Bayesian Approach to Disease Mapping**,” by Mary M. Louie, Ph.D., Associate Service Fellow, National Center for Health Statistics (NCHS), CDC, **2:00P.M. (EST)**, live at NCHS (1st floor). An abstract of this presentation is included in this edition. The NCHS GIS Guest Lecture Series has been presented continuously at NCHS since 1988. As with all live lectures, Envision (live interactive) will be available to offsite CDC locations as well as IPTV. Web access will be available to our national and worldwide public health audience. 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. [Questions: please contact Editor, *Public Health GIS News and Information*, at cmc2@cdc.gov]

[Notes: (1) Calendar events are posted as received; for a more complete listing see NCHS GIS website and calendar; (2) Disclaimer: The findings and conclusions in this report are those of the Editor and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC)]

2005

133rd Annual Meeting and Exposition, American Public Health Association (APHA), December 10-14, 2005, Philadelphia PA [See: <http://www.apha.org/meetings>]

2006

* Forum on Earth Observations: “Managing Risk in the 21st Century,” February 15-16, 2006, La Jolla CA [See Forum: <http://www.forumoneo.org>]

* 23rd Annual Behavioral Risk Factor Surveillance System (BRFSS) Conference, CDC, March 18-22, 2006, Palm Springs, CA [See Behavioral Surveillance website at: <http://www.cdc.gov/brfss/conference/index.htm>]

* Community Solutions’ 64th Annual Human Services Institute, March 24, 2006, Cleveland OH [See CCS website: <http://www.communitysolutions.com>]

* International Conference on Emerging Infectious Diseases, CDC and partners, March 19-22, 2006, Atlanta GA [See: <http://www.iceid.org>]

* 19th Annual Towson University Geographic Information Sciences Conference (TUGIS 2006), March 20-21, 2006, Towson MD [See annual Towson University GIS site: <http://cgis.towson.edu/tugis2006>]

* Senses of Place, “Exploring concepts and expressions of place through different senses and lenses,” April 6-8, 2006, University of Tasmania, Tasmania Australia [See site: <http://www.utas.edu.au/placenet/senses>]

* International Congress on Physical Activity and Public Health, CDC and Association of State and Territorial Chronic Disease Program Directors, April 17-20, 2006, Atlanta GA [At: <http://www.cdc.gov/nccdphp/dnpa/ICPAPH>]

* 2006 National STD Prevention Conference, “Beyond The Hidden Epidemic: Evolution or Revolution?,” May 8-11, 2006, Jacksonville FL [See: <http://www.cdc.gov/stdconference>]

* 7th Annual International Conference on Digital Government Research, “Integrating Information Technology and Social, Behavioral and Political Sciences Research for Effective Government,” May 21-24, 2006, San Diego, California [See: <http://dgrc.org/dgo2006>]

* GeoTec Event 2006, “Celebrating History and Innovation,” June 18-21, 2006, Ottawa Canada [See: <http://www.geoplac.com/gt>]

* International Geographical Union Commission on Health and the Environment, “Towards Healthier Environments: Regional Responses to Global Changes,”

June 29-July 2, 2006, Auckland, N. Zealand [See website at: <http://Geo-health@flinders.edu.au>]

* 2006 World Cancer Conference, "Bridging the Gap: Transforming Knowledge into Action," July 8-12, 2006, Washington DC [See: <http://www.worldcancercongress.org>]

* XXIII International Biometric Conference, July 16-21, 2006, Montréal, Canada [See Biometric Conference website: <http://www.abc2006.org/pdf/call.pdf>]

* 11th World Congress of Public Health and the 8th Brazilian Congress of Collective Health, August 21-25, 2006, Rio de Janeiro, Brazil [See conferences website at: <http://www.saudecoletiva2006.com.br>]

* International Society for Equity in Health (ISEqH) Fourth International Conference, "Creating Healthy Societies through Inclusion and Equity," September 11-13, 2006, Adelaide, Australia [See: <http://www.iseqh.org>]

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. **GIS and Unexpected Events**, University Consortium for Geographic Information Science (UCGIS). Hurricanes, earthquakes, tsunamis, terrorist attacks, along with other disasters, have wreaked havoc around the world. For the last 15 years, publicly funded GIS research has created a sophisticated set of analytical theory and tools that facilitate a community's ability to plan for or respond to these disruptive incidents. UCGIS' congressional program at its Winter 2006 meeting, **February 9-10, 2006**, in Washington D.C. will feature a select panel of experts that describe how their GIS research helps mitigate and support recovery efforts during conditions that threaten public health, safety and livability. Targeted audiences for the presentation may include members of Congress (and/or their staff), representatives from executive agencies, and other organizations involved in critical GIS research in these areas. The UCGIS calls on members to participate in the panel, and submit a one page summary of key findings drawn from existing projects, or motivation for and anticipated results from proposed projects, that

demonstrate how GIS research and its applications are essential in this aspect of public security. [Submissions and questions, should be sent to John Shuler, University of Illinois at Chicago (alfred@uic.edu) by November 15, 2005. See: <http://www.ucgis.org>]

2. Martin Kulldorff, Harvard Medical School, reports **SaTScan v.6** has been released and can be downloaded at <http://www.satscan.org> (or updated from the update button of an earlier version). **New analytical features include: ordinal probability model for categorical data that is ordinal in nature; and exponential probability model for continuous survival time data with and without censoring.** The SaTScan software analyzes spatial, temporal and space-time data using the spatial, temporal, or space-time scan statistics. It is designed for any of the following interrelated purposes: To perform geographical surveillance of disease, detect spatial or space-time disease clusters, and see if they are statistically significant; To test whether a disease is randomly distributed over space, over time or over space and time; To evaluate the statistical significance of disease cluster alarms; and, To perform repeated time-periodic disease surveillance for early detection of disease outbreaks. The software may also be used for similar problems in other fields such as archaeology, astronomy, criminology, ecology, economics, engineering, genetics, geography, geology, history or zoology. [Contact: Martin Kulldorff at martin_kulldorff@hms.harvard.edu]

B. Department of Health and Human Services

<http://www.hhs.gov>

3. HHS Secretary Mike Leavitt announced on September 29, 2005, that in the month since Hurricane Katrina struck the Gulf Coast, an estimated more than **20** percent of all those affected by the storms and who have filed for FEMA assistance are now receiving HHS benefits and services. Furthermore, **41 percent of the 857,000** evacuees living in a different zip code from the damaged areas are receiving help from HHS. Because many victims of the hurricane no longer have the records or legal documents to help prove their eligibility for benefits from various government programs, HHS has given states the flexibility to enroll evacuees without requiring documents such as tax returns or proof of residency. This action permits evacuees to apply to the full range of federal benefits administered by the states, including HHS programs that provide services through **Medicaid**,

family assistance through **Temporary Assistance to Needy Families (TANF)**, **child care support**, **foster care assistance**, **mental health services** and **substance abuse treatment services**.

Administration for Children and Families

<http://www.acf.dhhs.gov>

4. **ACF Awards \$75M for Reduction in Out-of-Wedlock Births: New York, Utah and District of Columbia receive bonuses.** On October 12, 2005, the ACF announced the awarding of \$25 million bonuses each to New York, Utah and the District of Columbia for achieving significant decreases in out-of-wedlock births. The awards are part of the seventh round of bonuses to states and territories for reductions in out-of-wedlock births, under the welfare reform law of 1996. The law provides bonuses to states that have the largest reduction in the ratio of out-of-wedlock births to total births along with a corresponding decrease in the abortion rate. [See source: ACF Press Release]

Administration on Aging

<http://www.aoa.gov>

5. AoA has worked closely with the National Aging Network to assist in the recovery in those communities hardest hit by the hurricanes. The **AARP** is providing money and volunteers, **American Association of Homes and Services for the Aging** are providing temporary housing in some of their facilities, foundations are getting involved, the **National Association of State Units on Aging and the National Association of Area Agencies on Aging** are coordinating the responses from state and area agencies on aging that are sending staff, money and supplies. Given the widespread devastation, extensive long-term recovery efforts are needed to help restore safe and livable environments for older persons. [See source: AoA September 13, 2005, Press Release]

Agency for Healthcare Research and Quality

<http://www.ahrq.gov>

6. AHRQ's initiative on health information technology includes \$166 million in grants and contracts in 41 states to support and stimulate investment in health IT, especially in rural and underserved areas. As part of this initiative, AHRQ created the **National Resource Center for Health Information Technology**. In addition to providing technical assistance, the National Resource

Center shares new knowledge and findings that have the potential to transform everyday clinical practice.

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>

7. CDC will celebrate **GIS Day November 16, 2005**, at the Atlanta Roybal campus. GIS Day is a grassroots event that formalizes the practice of Geographic Information Systems (GIS) users and vendors of opening their doors to schools, businesses, and the general public to showcase their real-world applications of this important technology. The event is principally sponsored by the National Geographic Society, Association of American Geographers, University Consortium for Geographic Information Science, U.S. Geological Survey, Library of Congress, Sun Microsystems, Hewlett-Packard, and the Environmental Systems Research Institute. Attendees can expect to observe CDC GIS project presentations, a CDC Map Gallery, CDC Software and Internet application demonstrations, and obtain information on GIS training, technical assistance, user groups and listservices. [Please see Final Thoughts, this edition, for program agenda; For questions or information, please contact Carl Kinkade at mke5@cdc.gov; or program organizers Carl, Dabo Brantley, at mdb4@cdc.gov and Andy Dent, at aed5@cdc.gov]

8. **2004 SMART BRFSS Data, Prevalence Tables and Maps.** The CDC's Behavioral Surveillance Branch in the Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Coordinating Center for Health Promotion, is pleased to announce the release of the 2004 SMART BRFSS data, prevalence tables and 2004 BRFSS Maps. SMART BRFSS Selected Metropolitan/Micropolitan Area Risk Trends from the Behavioral Risk Factor Surveillance System began with the analysis of data from the 2002 BRFSS. It now includes data from 2002, 2003, and 2004, with prevalence estimates for over 140 metropolitan and micropolitan statistical areas (MMSAs), as well as many counties within those areas. There are 27 additional MMSAs with data available for 2004. As with the past data, the Web site includes both the data sets and the prevalence tables for MMSAs and counties, as well as pre-set Quick View charts with seven select risk factors in easy to print out PDF format, which compare county,

MMSA, and state data. [The SMART BRFSS data and tables are located at <http://apps.nccd.cdc.gov/brfss-smart/index.asp>]

The 2004 BRFSS Maps provide the third year of data included in this unique interactive Web site, which graphically displays the prevalence of behavioral health risk factors by MMSAs. **Using Geographic Information System (GIS) mapping technology and BRFSS data, BRFSS Maps allows users to visually compare prevalence data for states, territories, and local areas.** Now including data for 2002, 2003, and 2004, visitors to the Web site can create, save, and print customized state and MMSA maps detailing a variety of health-related risk factors. State and MMSA data layers can be displayed independently or in combination to identify regional patterns. Users also can download the state and MMSA BRFSS data in a GIS shapefile format for in-depth analysis in a GIS. [Please visit the BRFSS Maps Web site at <http://apps.nccd.cdc.gov/gisbrfss/default.aspx>; Data and map contact: Lina Balluz at lib7@cdc.gov]

9. The **National Asbestos Exposure Review (NAER)** is the name of the Agency for Toxic Substances and Disease Registry (ATSDR) project to evaluate sites that received and processed vermiculite mined in Libby, Montana. Libby vermiculite was shipped to over 200 locations around the U.S. for processing. We now know that this vermiculite contained asbestos. Initially, the National Asbestos Exposure Review (NAER) will focus on **28 Phase 1 sites**, which received approximately 80 percent of the vermiculite mined in Libby from 1964 through 1980. ATSDR and other agencies are evaluating human health effects that may be associated with past or current exposure to asbestos at the processing sites and in adjacent communities. [See detailed information on the NAER study: <http://www.atsdr.cdc.gov/naer/index.html>]

10. Editor: I am pleased to announce that CDC/ATSDR has initiated a new GIS listserv resource, **One Public Health GIS (One-PH-GIS-L)**. This listserv is designed to provide a forum for the timely online discussion and sharing of GIS information among all interested persons. GIS topics of interest are unlimited in scope and can include discussions pertaining to work applications, the availability of data and information resources, job vacancies, tips and tools, funding announcements, educational opportunities, and other related GIS areas of interest and communications. [To subscribe, please visit <https://list.nih.gov/archives/one-ph-gis-l.html> and select 'Join

the List'; For questions pertaining to the list please contact the One-PH-GIS-L list manager, Cherryl Ranger, GIS Training Manager, ATSDR, at chr4@cdc.gov]

Centers for Medicare and Medicaid Services

<http://www.cms.hhs.gov>

11. The total health expenditures of Medicare beneficiaries tend to increase dramatically in their last years of life. While there are substantial increases in payments by all sources, Medicare spending increases at the greatest rate. This change in the distribution of payment sources is driven mainly by a tendency to more intensive use of **hospital inpatient services** in the last three months of a beneficiary's life. [Source: **Medicare Current Beneficiary Survey (MCBS) Profiles**]

Food and Drug Administration

<http://www.fda.gov>

12. In response to the emerging threat of pandemic (Avian) influenza, the FDA today announced the formation of a **Rapid Response Team** to ensure that antiviral drugs are available to the American people, in the event they are needed. While there is no current flu pandemic, the team will help ensure an adequate supply of treatments, such as oseltamivir phosphate (Tamiflu) and other anti-influenza drugs, for stockpiling in the event there is an outbreak in the United States. The Rapid Response Team will address roadblocks to increased manufacturing of products, such as Tamiflu (oseltamivir phosphate). It is anticipated that Tamiflu production can be in full gear within 12 months, with substantial product available, should it be needed.

Health Resources and Services Administration

<http://www.hrsa.gov>

13. **HRSA's Geospatial Data Warehouse** was selected among ten winners from 132 highly qualified entries, at this year's GCN (*Government Computer News*) Awards Gala in Washington, D.C. The competition is weighted on the basis of overall accomplishments, innovative use of technology, and the benefits of the program to agency mission and constituencies. **The relief efforts for Hurricane Katrina provided a prime example of its use.** HHS has more than 300 health clinics in the affected area; 10 were closed temporarily and 11 destroyed by the hurricane. As that information became available to the crisis center, it immediately was routed into the data warehouse and on a real-time basis was available on a

map. Congratulations HRSA! [See full news coverage at the following website: http://www.gcn.com/24_30/news/37183-1.html]

Indian Health Service

<http://www.ihs.gov>

14. It is estimated that one in every four girls and one in every seven boys will be a victims of sexual abuse in Indian Country. In 2005, the Indian Health Service began funding for the Indian Health Service and Office for Victims of Crime (IHS/OVC) Child Abuse Project training program now called the **Indian Health Service Child Abuse Project**. The Project provides equipment, training, and resources to medical providers within the Indian Health Service and Tribal programs on the medical evaluation of child abuse. [Source: IHS Child Abuse Project]

National Institutes of Health

<http://www.nih.gov>

15. The National Cancer Institute (NCI) has made available several new GIS tools useful for ArcView users (http://www.healthgis-li.com/researchers/stat_tools.jsp). There is some documentation available for these tools in the Long Island GIS User's Guide, a 189-page document also available on the Long Island GIS web site (http://www.healthgis-li.com/researchers/User_Guide.pdf). **Areal Interpolator** is an ArcView 9 extension that uses simple areal interpolation to calculate a variable for a given area. The tool assumes the variable is distributed uniformly over the area. **Cluster Analysis** is an ArcView 9 extension that requires the installation of SatScan (<http://www.satscan.org>). By adding this tool extension to ArcView, you are able to select the various parameters using the ArcView system rather than using two different applications for your research and analysis. The data layers selected in ArcView are formatted into files that run in SaTScan. The output is then sent back to the user in ArcView. All of this activity is completely transparent to the user while working in ArcView. **Disease Rate Calculator** also is an ArcView 9 extension for calculating crude and adjusted disease rates. Rates can be adjusted by age, sex, and/or race using either the direct or indirect method. The tool uses simple areal interpolation to calculate the population [if needed]. **Empirical Bayes (EB)** is an ArcView 9 extension used by epidemiologist and other health researchers to estimate disease risks for small areas and rare diseases. The method distinguishes between variations expected in other methods (e.g.

Poisson) and the variation that is real. An empirical Bayes variation is estimated from the variation in the data itself. The data for small numbers is pooled across areas to provide a more stable estimate of the rate. [Contact person: David Stinchcomb at stinchcd@mail.nih.gov]

Substance Abuse and Mental Health Services Administration

<http://www.samhsa.gov>

16. The Center for Substance Abuse Treatment (CSAT) is pleased to introduce the draft version of the **CSAT Disaster Recovery Resources CD-ROM**. Significant substance abuse prevention and treatment issues arise in disaster situations and are closely related to other mental health issues that may be exacerbated in the aftermath of disaster. CSAT has compiled a wealth of resources that address these concerns and contain vital statistics, tips, and case studies pertinent to planning for and responding to disaster substance abuse needs. This material is quite pertinent to all Federal, State, and Territory personnel involved in disaster behavioral health as well as non-governmental agencies active in disaster.

C. Historically Black Colleges and Universities (HBCUs), Hispanic Association of Colleges and Universities (HACUs), and Other Minority Health

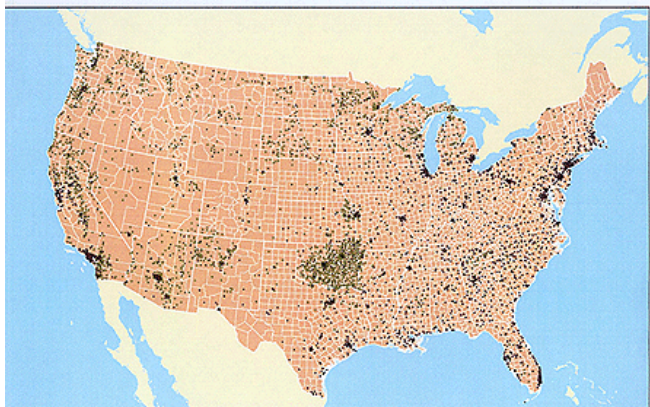
News [A listing of HBCUs and HACUs may be found at the following websites <http://www.smart.net/~pope/hbcu/hbculist.htm> and <http://www.hnip.net>]

17. The U.S. Department of Health and Human Services (HHS) announced more than \$12 million to support **minority health in the aftermath of Hurricane Katrina**. The National Institute of Health's (NIH) National Center on Minority Health and Health Disparities (NCMHD) will aid aggressive outreach efforts through faith-based, community and other organizations that work with racial and ethnic minority communities and minority media outlets. The agency will award \$5 million to the Gulf Coast and surrounding area's HHS, NIH and NCMHD health disparities centers of excellence to support **"innovative" relief efforts, such as culturally relevant mental health services and mobile units to gather data for electronic health records**. HHS will also issue roughly \$4.8 million to the state Offices of Minority Health to improve the health and quality of care for racial and ethnic minorities affected by Hurricane Katrina. In addition, a \$500,000 grant will support the HHS and March of Dimes' **Closing**

the Gap on Infant Mortality campaign, which provides services for pregnant women and families with infants in the Baton Rouge region. [Source: HHS News 9/30/05].

18. Heart Attack Death Rates Found Higher for All Patients in Hospitals Treating Larger Share of African Americans. Ninety days after acute myocardial infarction (AMI)- or heart attack -death rates for African Americans and white patients were found to be significantly higher in hospitals that disproportionately serve African-American patients than in hospitals that serve mainly white patients, according to a major new study led by researchers at Dartmouth Medical School. The researchers suggest that quality of care, more than racial differences per se, determines AMI outcomes. Based on the study findings, the investigators assert that targeted quality improvements at hospitals serving large shares of African Americans could enhance AMI care for all patients in those hospitals as well as potentially reduce black-white differences in AMI outcomes overall. The analysis, published in the October 25, 2005, edition of *Circulation: Journal of the American Heart Association*, is one of the first to look at the association between the racial composition of a hospital's patients and health outcomes. The study was funded in part by the National Institute on Aging (NIA), a component of the National Institutes of Health, HHS. Additional funding was provided by the Robert Wood Johnson Foundation. [See: <http://www.nih.gov/news/pr/oct2005/nia-24.htm>]

19. Mapping a Shared Vision of Hope. This website introduces the Geographic Information System (GIS) as a public health tool for displaying and analyzing data to develop and evaluate diabetes programs in Indian Country. This GIS supports American Indian and Alaska



Native (AI/AN) communities as they strive to prevent diabetes and care for their diabetic citizens. This project guides AI/AN communities in developing effective GIS mapping and analysis strategies to aid diabetes care and prevention. **The Mapping a Shared Vision of Hope web site provides a tool for discovering spatial distributions among the health and social variables of AI/AN communities.** This tool is designed for health professionals, map makers (both experienced and beginning), policy analysts, and everyone who is interested in learning more about mapping methods and applications with GIS. [See: <http://mappingavision.unm.edu>] **[Dot density map:** shows disparity between the high numbers of End Stage Renal Disease (ESRD) providers in the eastern United States compared to high concentrations of Indian Health Service patients with diabetes in the Midwest (2000 Census)].

20. Beyond Red Lake-The Persistent Crisis in American Indian Health Care, Roubideaux Y, *NEJM* 353(18):1881-1883 NOV 3 2005 [excerpts]: During a brief orientation, my supervisor described the [Native American] community of approximately 10,000 people and the challenges it faced. The unemployment rate hovered around 80 percent, and alcoholism, substance abuse, injuries, accidents, and violence were common. National statistics show persistent disparities in socioeconomic conditions between the people who live on most Indian reservations and the U.S. population at large, with higher rates of unemployment, lower median incomes, lower educational levels, and higher rates of poverty.

For most American Indians, relocation to rural reservations in the 1800s resulted in a loss of culture, traditions, and familiar ways of life and left them isolated in places that were far removed from the resources available in urban areas. Years of poor educational systems and lack of opportunity have resulted in seriously depressed socioeconomic conditions on most reservations. In particular, **American Indians and Alaska Natives are experiencing an epidemic of diabetes**, with a prevalence two to three times that among non-Hispanic whites in the United States. In some Indian communities, more than half of all adults have diabetes, and without access to high-quality medical care, the ability to obtain or prepare healthful food, and the money to buy shoes that fit, many patients end up in the clinic or emergency room with infections, strokes, and heart attacks. The lack of fresh vegetables and healthy choices

at the local grocery store means that most families live on high-fat foods such as fried bread, Indian tacos, and junk food.

21. THRIVE: "Toolkit For Health & Resilience In Vulnerable Environments." The Prevention Institute's Final Project Report, Executive Summary, Excerpts, September 2004. All members of a community are affected by the poor health status of its least healthy members. The US has a history and continued practice of deeply-rooted personal and institutional biases directed against people of color in key elements of community life, such as employment, housing, the justice and education systems, public health, and health care. Therefore, it is not surprising that there are disparities in health. Indeed, given the history of inequality and the resulting disparity in opportunity, health disparities are currently a predictable and persistent problem.

There is a great risk that the prevalence of disparities may increase as the population becomes even more multicultural. As the country becomes increasingly diverse, the reality of a healthy and productive nation will increasingly rely on the ability to keep all Americans healthy and eliminate racial and ethnic disparities by improving the health of communities of color. Health care is among the most expensive commitments of government, businesses, and individuals. Illness and injury also generate tremendous social costs in the form of lost productivity and expenditures for disability, worker's compensation, and public benefit programs. **Eliminating racial and ethnic health disparities is imperative both as a matter of fairness and economic common sense.** This tremendous challenge can- and must -be met with a focused commitment of will, resources, and cooperation to make change happen.

Under contract with the US Office of Minority Health, Prevention Institute developed a community resilience assessment toolkit, **THRIVE (Toolkit for Health & Resilience in Vulnerable Environments)**. THRIVE helps communities bolster factors that will improve health outcomes and reduce disparities experienced by racial and ethnic minorities. It provides a framework for community members, coalitions, public health practitioners, and local decision-makers to identify factors associated with poor health outcomes in communities of color, engage relevant stakeholders, and take action to remedy the disparities.

The final project report provides an overview of the project, including conceptual background information, a review of existing resilience efforts, research that informed the tool, a description of the project's methodology, a description of the pilot events and outcomes, and recommendations for next steps. At its year two meeting, the project expert panel asserted that THRIVE has demonstrated utility and that it should be made available to the public as soon as possible. Further, the panel highlighted the value of training and technical assistance to ensure that the toolkit is put to maximum use. [For full report and related articles, see: www.preventioninstitute.org/pdf/THRIVE_execusumm_web_020105.pdf]

D. Other Related Public Health GIS News

22. University Of Illinois Develops Bioterrorism 'Serious Game'. A video game that simulates biological, chemical, radiological and natural disasters in a major metropolitan area, developed by a team from the University of Illinois at Chicago (UIC), will be used to prepare public health workers and emergency responders for real life emergencies, according to a press release from the university. **The video game is the first in a series of simulations to address bioterrorism, pandemic flu, smallpox and other disasters that emergency personnel must prepare for.** Until recently, public health workers and emergency responders have been trained using role-playing exercises and actual disaster drills, which are costly and time-intensive when preparing thousands of people for a multitude of catastrophic scenarios. "In light of the disastrous response to Hurricane Katrina, it is clear that preparedness training needs to go a lot further," said Lars Ullberg, executive producer of the project at UIC's Center for the Advancement of Distance Education. "Simulations are the only efficient and cost-effective way to bridge the gap between theory and practice and prepare our emergency workers for both the expected and unexpected."

The first scenario in the project simulates a bioterrorism response focused on training thousands of people to dispense mass amounts of drugs and vaccines in the wake of an anthrax attack. The simulation begins with a television news report warning the public about the disaster. As the public begins to flock to emergency dispensing and vaccination centers, public health workers and emergency responders are faced with real-life situations, including a person who may have been

exposed to anthrax and a hysterical woman who believes the world is going to end. Throughout the simulation, the game tracks how the public health workers respond to various situations and how quickly patients are being evaluated and treated. The simulation project was developed in only three months for the Chicago Public Health Department and was unveiled at CDC's Annual Distance Learning Summit in September. It will also be presented at the Second Annual Serious Games Summit. Another scenario, involving an outbreak of pandemic flu, is currently under development. "The response from both the CDC and the professional community has been overwhelmingly positive," said Colleen Monahan, director of UIC's Center for the Advancement of Distance Education at the School of Public Health. "We believe this is the first serious game focused on preparing the public health workforce, and it will revolutionize emergency preparedness training." [See UIC News Release, October 27, 2005, for the direct link to this article at website <http://tiger.uic.edu/htbin/cgiwrap/bin/newsbureau/cgi-bin/index.cgi>]

III. GIS Outreach

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

From Talbot Brooks, Delta State University, Cleveland MS: **Report on GIS Corps geospatial support in hurricane-affected areas.** The combined GIS Corps and local volunteers cooperatively supported many arms of both the Federal and Mississippi State Departments of Health (DOH) and Human Services (DHS). In Mississippi, these are separate entities. Some of the requested maps included the location of hospitals and medical centers with electric substations, wells, and major transportation routes and a map depicting the locations and populations of shelters (created through a joint table generated by MS DHS showing Red Cross and other non-profit shelters) with kitchens, water, and ice. I would love to share information about the construction of these maps as I did early versions- GIS Corps volunteers grabbed the latter project and ran with it once on scene (and did a great job!). I know that the former map was used by ESF-3 (Emergency Service Function 3, public works) to prioritize some of its missions and the latter was posted and regularly consulted by FEMA, MEMA, MS DHS, MS DOH, and others as quickly as we were able to update it. [Contact: Talbot, Director, Center for Interdisciplinary Geospatial Information Technologies at tbrooks@deltastate.edu; Editor: Special thanks are extended to

Wendy Francis, Executive Director, Urban and Regional Information Systems Association (URISA), at email address wfrancis@urisa.org or website www.urisa.org, for the quick reaction of the URISA-sponsored GIS Corps of volunteers, at <http://www.giscorps.org>, to lend geospatial assistance to Gulf coastal hurricane-affected areas]

Inquiry about cancer maps of "rates" versus "proportions". Question: Is a "map of rates of late stage cases" always a better choice than a "map of the proportions of cases diagnosed at the late stage"?

Background. Some states have developed maps comparing counties during the 1980s with the 1990s on percentage of breast cancers and of colorectal cancers that are diagnosed at late stages. In addition, some states have used the SaTScan binomial case-control model to identify clusters of census tracts with high proportions of late stage cancer. Some of the literature on screening notes that it's best to examine rates rather than percentages and to use late stage rather than early stage cancer as the focus.

This is for several reasons. To reduce mortality, the goal is to reduce the incidence of late stage disease. For all cancer screening tests, lead time and length biases may increase the rate of early stage cancer (increasing the percentage of cancers diagnosed early) without reducing mortality (the benefit of cancer. Also, tests may lead to over diagnosis, e.g., for prostate there are a range of estimates of over diagnosis of cancers that would otherwise have never been detected. For colorectal cancer and cervix cancer, since the test can reduce risk of developing the disease by identifying precancerous lesions, rates of early stage cancer are affected as are rates of late stage cancer, and the percentage early may be a poor indicator of effectiveness of the interventions to increase screening. So, the best outcome is probably some combination of mortality and the rate (not percentage) of late stage disease?

Collective response from Martin Kulldorff, Harvard Medical School and Harvard Pilgrim Health Care; Carol Crawford, National Center for Environmental Health, CDC; Eugene Lengerich, Pennsylvania State University, Department of Geography; and, Gerry Rushton, University Iowa, Department of Geography: I think they answer two different questions. With the first, one is looking at the geographical distribution of cancer incidence, focusing on the more serious late stage cancers. With the latter,

one is looking at the geographical distribution of stage, adjusting for the geographical distribution of cancer incidence. For example, suppose we have an area with very few cases but they are all late stage. That may be a low incidence area in the first analysis but a high stage area in the other. As another example, suppose we have an area with lots of incidence cases with the same stage distribution as the country as a whole. That would be a high incidence area in the first analysis but neither high nor low in the second one.

I think more information on the purpose of the mapping is important as well. If the purpose is to examine whether or not there is differential screening at different locations at one point in time, then maps of the proportion early to late is useful. This may be affected by the aggressiveness of disease as well. If the purpose is to determine whether screening has increased over time, than a reduction in rate of late stage disease (and mortality) could be hypothesized and examined (In this case, there should be an initial increase in early stage disease as latent disease is identified from the initial screenings in the population).

We have been making age-adjusted late stage rates but they are still proportions of all of the particular cancer detected. However, I don't think you can just say one is always better than the other. They answer different questions, at least in the context of spatial analysis. With the percentage, the question is whether the pattern of late stage cancers differs from that of all cancer cases. With rates, the question is whether there is a pattern of late stage cancer cases. I think the first question is much more specific and more informative than the 2nd. I think the bottom line is the identification of the "at risk" population for late stage cancers. [Editor: Appreciation is extended to all responders; Of note, there appears to be consensus!]

IV. Public Health GIS Presentations and Literature
NCHS/CDC Cartography and GIS Guest Lecture
“An Overview of a Bayesian Approach to Disease Mapping,” Mary M. Louie, Ph.D., Associate Service Fellow, National Center for Health Statistics, CDC. Abstract. Disease mapping plays an enormously vital role in spatial epidemiology, allowing one to assess geographic patterns in disease risk and perhaps more importantly, to uncover risk factors associated with disease. We present the standard disease mapping framework, and discuss the challenges associated with

using standardized rates and the task of quantifying structured and unstructured variation in excess of the standard measurement error. We then present a Bayesian framework, the so-called "borrowing strength across units," which addresses the deficiencies in the standard framework, resulting in maps of smoothed rates. To illustrate the methodologies throughout, we provide results from the analysis of mortality data from gastric cancer in a population of males from Tuscany, Italy.

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, Excerpta Medica, and other databases. EID is part of CDC's key 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 **November 2005 11(11)** edition of EID is now online. This edition is devoted mainly to articles on viruses associated with a variety of environments and hosts [See EID website for this and other timely reports at: <http://www.cdc.gov/ncidod/EID/index.htm>]

(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(43)**- Incidence of End-Stage Renal Disease among Persons with Diabetes: United States, 1990-2002; Vol. **54(41)**- Influenza Vaccination Levels among Persons Aged >65 Years and among Persons Aged 18-64 Years with High-Risk Conditions: United States, 2003; Vol. **54(39)**- **Breast Cancer Screening and Socioeconomic Status-35 Metropolitan Areas, 2000 and 2002.** Studies have suggested that women with low incomes residing in metropolitan areas might be less likely to be screened for breast cancer than more affluent women residing in the same areas. However, few studies have examined the associations between breast cancer screening and both individual and area-based measures of socioeconomic status (SES) among women in metropolitan areas. To examine these

associations, CDC analyzed the percentage of women who had a mammogram by using individual data (i.e., household income and education level) from the 2000 and 2002 Behavioral Risk Factor Surveillance System (BRFSS) surveys and area-based data (i.e., percentages classified as living in poverty or at a low education level) from the 2000 U.S. Census. **This report summarizes the results of those analyses, which suggested that, among women in 35 metropolitan statistical areas (MSAs), those with annual household incomes of <\$15,000 were less likely to have had a mammogram than more affluent women (especially in areas where a greater proportion of women were affluent) and those without a high school education were less likely to have had a mammogram than women with more education (especially in areas where a greater proportion of women had higher education levels).** Studies are needed to determine how to increase the percentage of women having mammograms among women in low-income and low-education populations; Vol. **54(38)**-Infectious Disease and Dermatologic Conditions in Evacuees and Rescue Workers After Hurricane Katrina Multiple States, August-September, 2005;

(3) Preventing Chronic Disease

The **October 2005 2(4)** issue of *Preventing Chronic Disease* (PCD) is online and contains selected articles on a variety of chronic disease and prevention topics: obesity and health disparities (African American women), cancer and diabetes screening, and others [See: <http://www.cdc.gov/pcd/issues/2005/oct/toc.htm>]

Titles

Spatial decision support for assisted housing mobility counseling, Johnson MP, *Decis Support Syst* 41 (1): 296-312 NOV 2005;

RArcInfo: Using GIS data with R, Gomez-Rubio V and Lopez-Quilez A, *Comput Geosci-UK* 31 (8): 1000-1006 OCT 2005;

The Population Health Approach: health GIS as a bridge from theory to practice, Barnard DK and Hu W, *Int J Health Geogr* 4(23) OCT 2005;

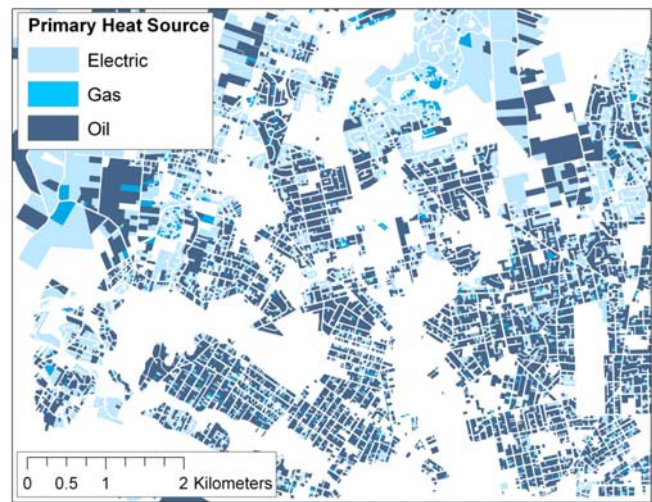
Geographical variation of cerebrovascular disease in New York State: the correlation with income, Han D, Carrow SS, Rogerson PA and Munschauer FE, *Int J*

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Genomic Cartography- Presenting the HapMap, Phimister EG, *NEJM* 17(353) 1766-1768 OCT 2005;

Integrated use of GIS-based field sampling and modeling for hydrologic and water quality studies, Vivoni ER, Richards KT, *J Hydroinform* 7(4): 235-250 OCT 2005;

Opportunities for using spatial property assessment data in air pollution exposure assessments, Setton EM, Hystad PW and Keller CP, *Int J Health Geogr* 4(26) OCT 2005 [Map shown below- Primary heat sources based on spatial property assessment data (SPAD)]

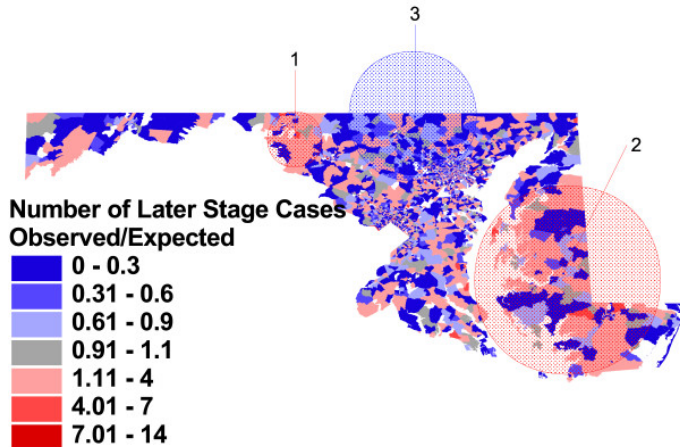


Dimensions and potentialities of the geographic information system on indigenous health, Garnelo L, Brandao LC, Levino A, *Rev Saude Publ* 39 (4): 634-640 AUG 2005;

GIS-based estimation of exposure to particulate matter and NO₂ in an urban area: Stochastic versus dispersion modeling, Cyrus J, Hochadel M, Gehring U, Hoek G, Diegmann V, Brunekreef B, Heinrich J, *Environ Health Persp* 113 (8): 987-992 AUG 2005;

Use Of Geocoding In Managed Care Settings To Identify Quality Disparities, Fremont AM, Bierman A, Wickstrom SL, Bird CE, Shah M, Escarce JJ, Horstman T and Rector T, *Health Affairs* 24(2) MAR/APR 2005;

Geographical clustering of prostate cancer grade and stage at diagnosis, before and after adjustment for risk factors, Klassen AC, Kulldorff M and Curriero F, *Inter J Health Geogr* 4(1) JAN 2005 [Map shown below-prominent relative risk clusters];



Mosquito habitats, land use, and malaria risk in Belize from satellite imagery, Pope K, Masuoka P, Rejmankova E, Grieco J, Johnson S, Roberts D, *Ecol Appl* 15 (4): 1223-1232 AUG 2005;

Using Hot-Spot analysis to study the clustering of Section 8 Housing Voucher Families, Wang X and Varady DP, *Housing Stud* 20(1) JAN 2005;

GIS Research

Geographic Information Systems (GIS) and Bioterrorism/ Disaster Planning: A Simple Model to Find First Responders during a Terror Attack on the Atlanta Marta System. [Author: Jim Tobias, GIS Programmer/Analyst, Science Applications International Corporation, CDC/National Immunization Program; Contact Jim at jtobias@cdc.gov] **This paper outlines a simple method to build spatial models to identify the first responders within a buffered distance of a specific Atlanta MARTA station. Introduction.** Geographic Information Systems (GIS) can be used to build models for disaster response. These models can be run in advance of a disaster to aid in response planning and creation of response plans. The purpose of this paper is to describe how ArcGIS Model Builder can be used to build simple models to plan response to attacks on specific MARTA stations in Atlanta, GA.

Recent disasters have underscored the importance of preparedness and planning for disaster

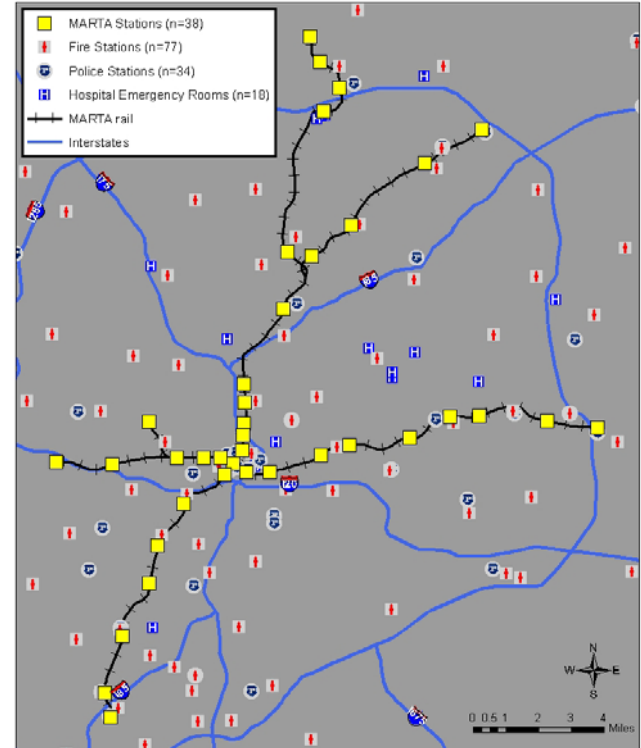
response. Mass transit systems have been the focus of major terror attacks since the mid 1990's. At least three major subway systems (Tokyo, Madrid, and London) have suffered various types of terrorist attacks. New York City officials recently stopped subway traffic in response to credible threats upon the city subway system.

Lessons have been learned from the various subway attacks. It is important to respond quickly to these attacks, stop subway trains, evacuate passengers, transport injured persons to hospitals, and prevent additional casualties. The front line of disaster response involves the 'first responders'. These first responders are typically police officers, fire fighters, emergency medical technicians, and ambulance staff.

Methods. The process of Model Building (for this paper) will involve the use of specific software: ArcGIS 9.1, ArcGIS Spatial Analyst Extension, ArcGIS Model Builder, and Python. The Spatial Analyst Extension is required for Model Building.

Fig 1. Atlanta MARTA system and all potential 'First Responders'

Atlanta MARTA System with First Responders, 2005



CDC Department of Health and Human Services
 Centers for Disease Control and Prevention
 Created: October, 2005
 Source: Atlanta Regional Commission
 ARISIA.CO
 Projection: Geographic
 Note: Map originally printed in color.

The building blocks of spatial models are called processes. A process contains an input, operation, and

output. The simplest models have one input, one operation, and one output. More complex models may contain many inputs, operations, and outputs. The common theme for models is: INPUT → OPERATION → OUTPUT.

All models make basic assumptions. This is both a limitation and a benefit. Assumptions can cage a model with specific dogma that may be incorrect or false. It is important to realize the limitations of the assumptions of a model. The benefit of an assumption can be that it simplifies a complex question and helps to focus on a simple answer. It is important to review the assumptions of a model and revise or to create additional models if assumptions are too narrow in scope. We will build a simple model that will find the first responders within 5 miles of a specific Atlanta MARTA station. The assumptions that we will make for the model are as follows: (1) Disaster at a specific Atlanta MARTA station will affect a 5 mile area around the station and (2) First responders who are within 5 miles of the MARTA station will respond to the disaster.

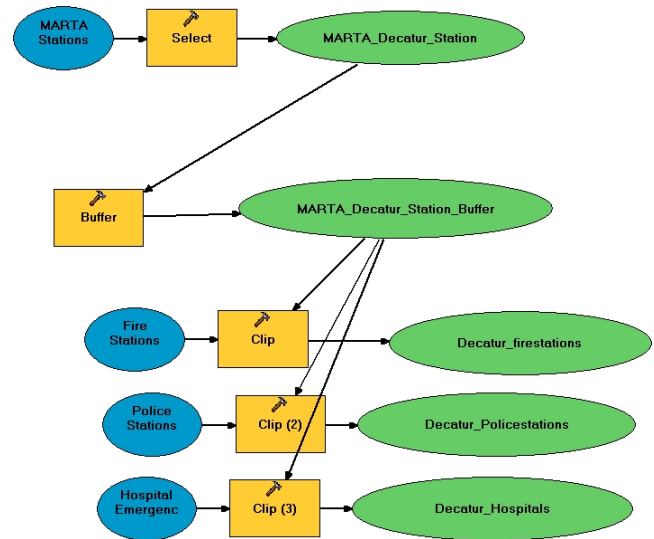
These two basic assumptions will make the model very simple. Some may argue that assumptions 1 and 2 are invalid and false. Before we can build a more robust model, it makes sense to first build a simple model. This model can then be modified to address our concerns about the underlying model assumptions or additional models can be made to accommodate additional factors.

Recall that all models are built with processes that have inputs, operations, and outputs. We will need a mechanism to store all of this data. We will use a personal geodatabase (.mdb) file to store all model input feature classes, model toolboxes, models, and model outputs. A personal geodatabase was created (demo.mdb) with feature classes of Atlanta fire stations, police stations, and hospital emergency rooms. Additional feature classes of the MARTA rail system, and MARTA stations were also imported into the personal geodatabase. A custom toolbox called MODELS was created to store our simple spatial model.

Notice that there are 38 MARTA stations in the system. There are a total of 77 fire stations, 34 police stations, and 18 hospital emergency rooms within the extent of the map area. The ArcGIS Model Builder is used to create a spatial model that will select a specific MARTA station, create a 5 mile buffer, and select first

responders within that 5 mile buffer. The initial model will be based upon the Decatur MARTA station. This station is located in Decatur, GA on the east line of the Atlanta MARTA system. The Model to find first responders within 5 miles of the Decatur station looks like this:

Fig 2. The MARTA System Model



Notice that the blue ovals are model inputs. The yellow rectangles are model operations. The green ovals are model outputs. All of the inputs, operations, and outputs are stored in one personal geodatabase. The first process is a SELECT process. This process simply selects the Decatur MARTA station from the feature class of all MARTA stations and creates a new feature class called MARTA_Decatur_Station.

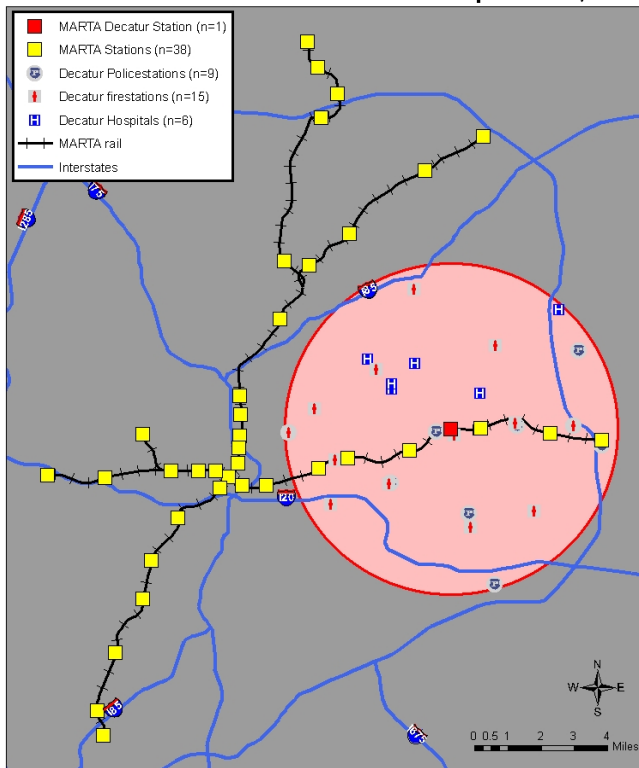
The second process uses the output from the first process (MARTA_Decatur_Stations) to create a 5-mile buffer and thus build a feature class called MARTA_Decatur_Station_Buffer. Processes 3,4, and 5 find the closest first responders with a Clip operation. The clip operation uses two inputs: first responders and the 5-mile buffer. Process 3 clips the feature class of all fire stations by the 5-mile buffer and creates a new feature class called Decatur_Firestations. Process 4 clips the feature class of all Police stations and creates a new feature class called Decatur_Policestations. Process 5 clips the feature class of all Hospitals and creates a new feature class called Decatur_Hospitals. This model is more than a picture. The model is a representation of Python code. Python is an open source language that is free (see: www.python.org). Python allows users to build

their own tools and create custom toolsets within ArcToolbox.

The model is then run by clicking the blue arrow button within the Model Builder window. All of the new feature classes are stored in the demo.mdb personal geodatabase. These new feature classes are then mapped to show the first responders within 5 miles of the Decatur MARTA station.

Fig 3. Decatur MARTA station with ‘First Responders’

Decatur MARTA Station with First Responders, 2005



CDC Department of Health and Human Services
 Centers for Disease Control and Prevention

Notice that the Decatur MARTA station is the red square along the east line of the Atlanta MARTA system. The five mile buffer is outline in red and the affected buffer area is colored pink. The first responders within 5-miles of the Decatur MARTA station have been selected and appear within the buffer area. This same model was replicated for all 38 of the Atlanta MARTA stations. This was a simple matter of copy and paste with a few minor SQL edits and name changes.

Results. A simple model was built to find first responders within a given area of a disaster site using standard GIS tools. This model was stored in a toolbox that within a personal geodatabase. This simple model

was replicated for all 38 of the Atlanta MARTA stations. A terror attack may never occur on the Atlanta MARTA system. Models that find first responders within 5 miles of any specific MARTA station have been run and these results have been stored within the demo.mdb personal geodatabase.

Additional models could be made to accommodate concerns that the affected area may be more or less than 5 miles. The disaster type would play a large part in determination of the affected area.

Additional concerns may be raised that first responders within 5 miles of Euclidean distance may not be the first to respond. It is very possible that traffic patterns and other problems may prevent certain responders from arriving on the scene (even though they are physically closer). A more complex model might take into account time of day and taxi-cab distance (rather than simply Euclidean distance).

Conclusions. Models are often used to answer specific questions or to create scenarios to plan response to various events. The question we sought to answer here was: Who are the closest first responders in the event of a terror attack on a specific Atlanta MARTA station? A simple spatial model was built to find the answer to this question.

All inputs, models, and outputs were stored in one personal geodatabase that can be viewed and used by other GIS personnel or emergency managers. Models were run in advance of any attack on the Atlanta MARTA system. The results of these models could be used by emergency managers and city planners to plan a response to terror attacks before they occur.

Planning and preparedness are the keys to effective disaster response. The fire department always leaves the garage door open with the fire truck full of gas and all of the equipment needed to fight a fire. When the fire alarm rings, the fire department enacts a plan and executes that plan. Public health should plan for disasters before they occur and develop models to help formulate effective response to many types of potential disasters. Disaster response with a plan will lead to less injury and death and will provide a greater level of public health service. **REFERENCES:** Underground: The Tokyo Gas Attack and the Japanese Psyche, Haruki Murakami, ISBN:0-375-72580-6; Python Programming for the absolute beginner: Michael Dawson, ISBN:1-59200-073-8; ArcGIS 9: Geo processing in ArcGIS, ESRI Press.

New Book

Spatial Analysis of GIS Information with ArcView GIS^R and ArcGis^R, David W.S. Wong and Jay Lee, John Wiley & Sons, U.S. and Canada, 2005. You may recall the authors' first book published in 2001, *Statistical Analysis with ArcView GIS*, which was intended to introduce geographers and nongeographers to spatial statistics and analysis. The current and updated book comes with ready-to-use tools and programs in spatial analysis and statistics that are integrated with a highly accessible GIS package; allows readers to verify the spatial and statistical concepts discussed; and, includes tools and data so that readers can participate and experiment with the demonstrations in the book. The authors provide useful educational spatial statistical tools and, as well, share extensive GIS experiences. [Editor: Congratulations are extended to David and Jay]

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

New Household Survey on Child Hunger

**Household Food Security in the United States, 2004
United States Department of Agriculture**

[Mark Nord, Margaret Andrews, and Steven Carlson]

Most U.S. households have consistent, dependable access to enough food for active, healthy living- they are food secure. But a minority of American households experiences food insecurity at times during the year, meaning that their access to enough food is limited by a lack of money and other resources. In about a third of such food-insecure households, one or more household members are hungry at times as a result. The U.S. Department of Agriculture (USDA) monitors the food security of U.S. households through an annual, nationally representative survey and has published statistical reports on household food security in the United States for each year since 1995. ***Household Food Security in the United States, 2004, presents statistics on households' food security, food expenditures, and use of food assistance for 2004.***

What Is the Issue? USDA's domestic food assistance programs increase food security and reduce hunger by providing children and low-income people access to food, a healthful diet, and nutrition education. Reliable monitoring of food security, food insecurity, and hunger contributes to the effective operation of these programs as well as that of private food assistance programs and other government initiatives aimed at

reducing food insecurity. USDA's annual food security report provides statistics that guide planning for Federal, State, and community food assistance programs.

What Did the Study Find? Throughout the year in 2004, 88.1 percent of U.S. households were food secure, down from 88.8 percent in 2003. Food-secure households had consistent access to enough food for active healthy lives for all household members at all times during the year. The remaining 11.9 percent (13.5 million households) were food insecure. These households, at some time during the year, had difficulty providing enough food for all their members due to a lack of resources. About a third of food-insecure households (4.4 million, or 3.9 percent of all U.S. households) were food insecure to the extent that one or more household members were hungry, at least some time during the year, because they could not afford enough food. **The prevalence of food insecurity with hunger was up from 3.5 percent in 2003.** The other two-thirds of food-insecure households obtained enough food to avoid hunger, using a variety of coping strategies, such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries or emergency kitchens. **Children were hungry at times during the year in 274,000 households (0.7 percent of households with children) because the household lacked sufficient money or other resources for food.** The prevalence of food insecurity with hunger among children has remained in the range of 0.5 to 0.7 percent (statistically unchanged) since 1999. [See USDA Economic Research Service (ERR 11), OCT 2005, at <http://www.ers.usda.gov/Publications/err11>]

Editor: I also want to call your attention to a related USDA report, ***Food Assistance Landscape, September 2005***, by Victor Oliveira, Economic Information Bulletin No. (EIB6-1), October 2005 (see URL: <http://www.ers.usda.gov/Publications/eib6-1>). It shows that the USDA expenditures for its 15 food assistance programs totaled \$25.9 billion during the first half of fiscal 2005 (October 2004-March 2005), an 11-percent increase over the first half of fiscal 2004. Five programs - **the Food Stamp Program, the National School Lunch Program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the School Breakfast Program, and the Child and Adult Care Food Program**- accounted for 95 percent of USDA's total expenditures for food assistance. Spending

on each of these five programs grew during the first half of fiscal 2005 relative to the first half of fiscal year 2004, but most of the increase was due to the Food Stamp Program. This report uses preliminary data from the Food and Nutrition Service to examine trends in the programs at the midpoint of fiscal 2005. It also discusses a recent ERS report that presents findings from an evaluation of projects aimed at testing ways to increase Food Stamp Program participation among eligible elderly individuals.

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>]

Recent (selected) Government Accountability Office (GAO) Reports, 2005

[See: <http://www.gao.gov>]

Indian Tribes: EPA Should Reduce the Review Time for Tribal Requests to Manage Environmental Programs, GAO-06-95, October 31, 2005

Department of Energy: Improved Guidance, Oversight, and Planning Are Needed to Better Identify Cost-Saving Alternatives for Managing Low-Level Radioactive Waste, GAO-06-94, October 31, 2005

U.S. Insular Areas: Multiple Factors Affect Federal Health Care Funding, GAO-06-75, October 14, 2005

Health Care: Continued Leadership Needed to Define and Implement Information Technology Standards, GAO-05-1054T, September 29, 2005 [Excerpts: GAO reported [in 2003] that progress in assuming leadership had occurred with the President's establishment of the National Coordinator for Health IT to guide the nationwide implementation of interoperable health

information systems, but noted that as health IT initiatives were pursued, it would be essential to have continued leadership, clear direction, measurable goals, and mechanisms to monitor progress.

In following up on these recommendations, GAO determined that HHS has taken several actions that should help to further define standards for the health care industry. First, the coordinator has assumed responsibility for the Federal Health Architecture that is expected to establish standards for interoperability and communication throughout the federal health community. Second, several HHS agencies continue their efforts to define standards as part of the department's Framework for Strategic Action. For example, the Agency for Healthcare Research and Quality is working with the private sector to identify standards for clinical messaging, drugs, and biological products. Third, HHS expects to award a contract to develop and evaluate a process to unify and harmonize industry-wide information standards. Fourth, in July of this year, HHS announced plans for a public-private committee to help transition the nation to electronic health records and to provide input and recommendations on standards.

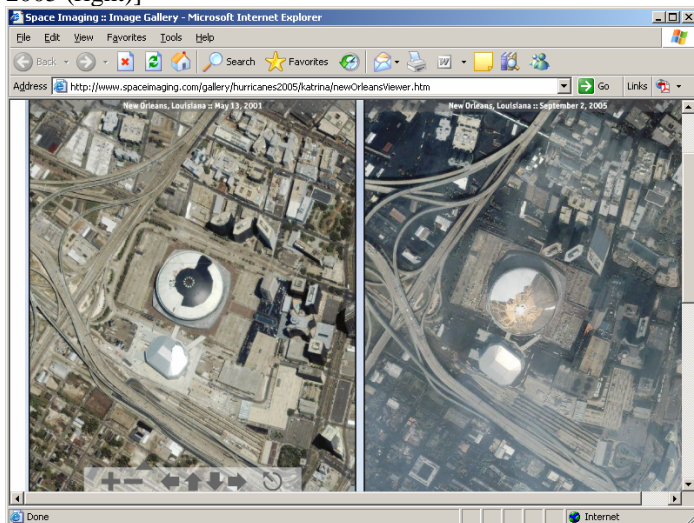
All of these are positive steps, however, much work remains to reach further consensus across the health care sector on the definition and use of standards. Until this occurs, federal agencies and others throughout the health care industry will not be able to ensure that their systems are capable of exchanging data when needed, and consequently will not be able to reap the cost, clinical care, and public health benefits associated with interoperability.

September 11: Monitoring of World Trade Center Health Effects Has Progressed, but Not for Federal Responders, GAO-05-1020T, September 10, 2005 [Excerpts: After the 2001 attack on the World Trade Center (WTC), nearly 3,000 people died and an estimated 250,000 to 400,000 people who lived, worked, or attended school in the vicinity were affected. An estimated 40,000 people who responded to the disaster - including New York City Fire Department (FDNY) personnel and other government and private sector workers and volunteers- were exposed to numerous physical and mental health hazards. Concerns remain about the long-term health effects of the attack and about the nation's capacity to plan for and respond to both short

and long-term health effects in the event of a future attack or other disaster.

Web Site(s) of Interest This Edition

<http://www.spaceimaging.com/gallery/hurricanes2005/katrina>
This gallery of photos provided by "Space Imaging" conveys the power of imagery in many **before and after images of Hurricane Katrina** in the Gulf Coastal region. [Shown below are side by side Ikonos satellite images of New Orleans dated May 13, 2001 (left) and September 2, 2005 (right)]



http://www.apha.org/medicaidwhitepaper/medicaidwhitepaper_full.pdf
APHA White Paper Urges Medicaid Reformers Not to Undercut Public Health. Medicaid provides primary, acute and long-term care to more than 50 million Americans- 39 million people in low-income families as well as more than 13 million elderly and persons with disabilities, including more than 6 million Medicare beneficiaries. **Although Medicaid has traditionally been viewed solely as an insurer of low-income and vulnerable populations, the program's coverage of essential public health services and financing of public hospitals and clinics improves the health status and outcomes of program beneficiaries and the population as a whole.** Medicaid provides health insurance coverage to 40 percent of all poor individuals, half of all low-income children and one in six Medicare beneficiaries.

<http://cidde-msl.cidde.pitt.edu/mediasite/viewer/?cid=8d9af019-6e82-4484-a89f-48e60882f989> **"The Public Health Consequences of Disasters: Challenges of Public Health Action,"** by Dr. Eric Noji, Medical Epidemiologist, CDC, September 29,

2005, Second Annual John Cutler Global Health Lecture, is now available in streaming video. This is a very informative presentation and part of the University of Pittsburgh's Graduate School of Public Health online *Supercourse*, "Epidemiology, the Internet and Global Health." The Supercourse has 20,300 faculty from 151 countries who created a Library of Lectures with 2156 timely and very informative lectures on the Internet. [See: <http://www.pitt.edu/~super1>]

http://www.unfpa.org/swp/2005/pdf/en_swp05.pdf **State of World Population 2005: The Promise of Equality, Gender Equity, Reproductive Health and the Millennium Development Goals.** It is a simple message but a powerful one: Gender equality reduces poverty and saves and improves lives. This year's The State of World Population report stresses that gender equality and reproductive health are indispensable to the realization of this promise. The UN Millennium Project, a panel of more than 250 experts from all over the world, identifies **gender inequality as one of the primary drivers of poverty and social exclusion.** This is essentially because discrimination effectively squanders human capital by denying one half of humanity the right to realize their full potential. More than 1.7 billion women worldwide are in their reproductive and productive years, between the ages of 15 and 49. Targeted investments in their education, reproductive health, economic opportunity and political rights can spur growth and sustainable development for generations to come. The report is published by the United Nations Population Fund, October 2005.

http://www.fgdc.gov/HSWG/ref_pages/DownloadSymbols_ref.htm
FGDC Homeland Security Working Group (HSWG) Updated Emergency Management and Hazard Mapping Symbols. The symbol set has recently been updated to Version 2.20 and can now be downloaded. This update provides two versions of symbology to resolve compatibility issues with certain programs, such as MapInfo, that require "symbol encoded" fonts.

<http://maps.a9.com/?ypLoc=800%20N%20Highland%20Ave%2C%20%20Atlanta%2C%20GA> **A9.com Launches Maps With Street-Level Images.** The a9.com, Inc. website provides some easy and functional directionality in maps. It also offers housing and street scenes (photographs) for or near the address you select, in one window, and interactively changes to another scene with the new map

location, in a linked window. [Editor: I believe I saw my old neighborhood and the same row houses in Baltimore where I grew up in the 1940s and 50s!]

<http://www.pohg.org.uk> The **Politics of Health Group (PoHG)** consists of people who believe that power exercised through politics and its impact on public policy is of fundamental importance for health. PoHG is a United Kingdom based group but with a clear international perspective and members throughout the world. The report ***UK Health Watch 2005*** is a major critique of the state of health care in the UK and can be downloaded from this site. An overall theme of the report is the need for the Government to 'refocus upstream'- to go beyond the common focus on diseases and lifestyles, and to address the social and political influences that are responsible for ill-health and inequality. Most of the report's articles identify economic factors like poverty and income inequality, together with social influences like unequal opportunities and discrimination, as the upstream factors requiring urgent preventive action. UK Health Watch 2005 was launched October 17, 2005, by PoHG. to coincide with the **UK European Presidency Health Summit: Tackling Health Inequalities.**

<http://www.spiritof1848.org> The Spirit of 1848 is a network of people concerned about social inequalities in health. The purpose is to spur new connections among the many of us involved in different areas of public health, who are working on diverse public health issues (whether as researchers, practitioners, teachers, activists, or all of the above), and live scattered across diverse regions of the United States and other countries. In doing so, we hope to help counter the fragmentation that many of us face: within and between disciplines, within and between work on particular diseases or health problems, and within and between different organizations geared to specific issues or social groups. By making connections, we can overcome some of the isolation that we feel and find others with whom we can develop our thoughts, strategize, and enhance efforts to eliminate social inequalities in health. Our common focus is that we are all working, in one way or another, to understand and change how social divisions based on social class, race/ethnicity, gender, sexual identity, and age affect the public's health.[Editor: Recognition is extended to Nancy Krieger, Harvard University, for her leadership]

Final Thoughts

CDC GIS Day 2005 Agenda

I am pleased to share with you the agenda for the 1st CDC Agency-wide GIS Day, scheduled for November 16, 2005, at CDC's new Global Communications Center, in Atlanta. I understand it is a special facility with much resident state-of-art informational and geospatial technology. I especially look forward to this event not only because it is groundbreaking but also because it signifies a new CDC GIS Enterprise approach that I believe will benefit the greater CDC and public health good. My vision is that every interested CDC staffer, who wishes to explore and examine the possibilities of using spatial statistical science for research and analysis, will have the opportunity to do so. Everyone who requires these tools should have access to them. Basic services include online georeferenced data sets and related resources, online (as well as classroom) instruction in the use of the softwares and online consensus guidance from GIS enterprise leadership on the most efficacious and scientifically-established ways to employ the tools. A dynamic GIS enterprise is one that welcomes and accommodates all interested parties, is capable of interfacing with other external GIS operations (especially other federal, state and local public health and related agencies) and one that can change as dictated by need. It has been a much anticipated development.

Oral Presentations:

9:00-9:15, Marc Overcash and Carl Kinkade (NCPHI)- **Introductions to GIS Day, CCGIS, and the Enterprise GIS Activities**; 9:20-9:40, Katrina Moore (NCCDPHP)- **Temporal Changes in the Geographic Disparity of Heart Disease Mortality: All Americans and Racial Subgroups**; 9:45-10:05, Eric Tassone (NCCDPHP) - **Determinants of County-level Stroke Mortality in the Southeastern United States, 1999-2002**; 10:10-10:30, Raoul Kamadjeu (NIP) - **Using Scalable Vector Graphics (SVG) Technology to Visualize Immunization Data in Web-based Immunization**

Information Systems; 10:35-10:55, John Pitman and Jim Tobias (NIP)- **GIS and Immunization Registry Data: A new tool to detect immunization pockets of need;** 11:00-11:20, Csaba Siffel, Matthew Strickland, Bennett Gardner, Adolfo Correa (NCBDDD)- **GIS and birth defects in Atlanta;** 11:25-11:45, Matthew Strickland, Csaba Siffel, Bennett Gardner, Alissa Berzen, and Adolfo Correa (NCBDDD)- **Determining the location error of Metropolitan Atlanta Congenital Defects Program geocodes using GIS-based methods;** 1:00-1:20, William Henriques (HHS-SOC)- **GeoSpatial Activities in the Secretary's Operation Center;** 1:25-1:45, Stephanie Foster and Rand Young (ATSDR/DHS)- **Presentation on Salisbury, NC;** 1:50-2:10, Vishnu-Priya Sneller, Drew Baughman, and Jim Tobias (NIP)- **Spatial and Temporal trends in reporting pertussis cases to CDC. United States 1990-2003;** 2:15-2:35, Andy Dent (ATSDR)- **Working with GRASP: The GRASP Intranet, Geospatial Data Index and Geocoding Web Service;** 2:40-3:00, **GIS Group Discussion;** 3:05-3:25, Jerry Curtis (NCEH)- **The Need for Accurate Geocoding in Public Health Applications: The Problem with Studies;** 3:30-3:50, Jesse Blanton (NCID), Arie Manangan (ATSDR)- **Rabies Map Server Application;** 3:55-4:15 Chuck Croner (NCHS)- **An Overview of CDC/ATSDR GIS: Current and Future Perspective.**

Map Gallery:

Jerry Curtis (NCEH)- Childhood Lead Poisoning: Linking Surveillance, Environmental, and Housing Data; Jim Holt (NCCDPHP)- Creating Cartograms for Public Health Data; Dabo Brantley (NCCDPHP) - Developing Field Methods and a Computer Application for Rapid Population Assessment in Refugee, IDP and other Complex Humanitarian Emergencies; William Henriques (HHS-SOC) tba; Jodi Vanden Eng (NCID)- To what extent does your neighbors net protect (or harm) you?; Jim Tobias (NIP) tba; Isaac Nwaise (NCCDPHP)- Patterns of Stroke Hospitalizations among Medicare Beneficiaries, 1995-2002; Andy Dent (ATSDR)- New Orleans Neighborhood Flood Depth Profile; Brian Kaplan (ATSDR)- Naturally Occurring Asbestos (NOA); Janet Heitgerd (ATSDR)- GRASP; Steve Bullard (ATSDR) – (1) New Orleans Imagery and (2) Chad; Arie Manangan (ATSDR)- GRASP DEOC Activities; Hua Lu (NCEH)- US Local Health Department Regions/Districts; Stephanie Foster & Rand Young (ATSDR/DHS)- tba; Bennett Gardner, Matthew Strickland, Adolfo Correa (NCBDDD)- Investigation of a Possible Birth Defects Cluster in Gwinnett County, Georgia, 2000-2003; and, Brian Lewis (ATSDR)- Asian & Pacific Islander Tuberculosis: Spatial and Temporal Analysis Techniques.



Demo Workstations:

Kelly Asadi (NCEH)- Spatial Epidemiology and Emergency Management (SEEM); Hua Lu (NCEH)- Public Health Geography Network (PHGN); Cherryll Ranger (ATSDR)- Online GIS Training; Jim Tobias (NIP)- Model Builder; David Ray (NCCDPHP)- Cardiovascular Health Internet GIS: Current and Upcoming Data; Andy Dent (ATSDR)- GRASP Intranet and Geospatial Data Index; Arie Manangan (ATSDR)- NCID Rabies Application; Dabo Brantley and Daniel Shorter (NCCDPHP)- Demonstration of the Reproductive Health Atlas; and, Dabo Brantley and Ben Sklaver (NCEH)- Demonstration of GeoNumero.

Charles M. Croner, Ph.D., 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 67th 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 December 14, 2005, for another in our GIS Guest Lecture Series

APPENDIX: MAPPING HEALTH INEQUALITIES

[Tenth in Collaborative Series: See also May, July, September, November 2004, January, March, May, July and September 2005 editions]

Cancer Deaths, Cuyahoga County, Ohio, 1997 and 1999 to 2001

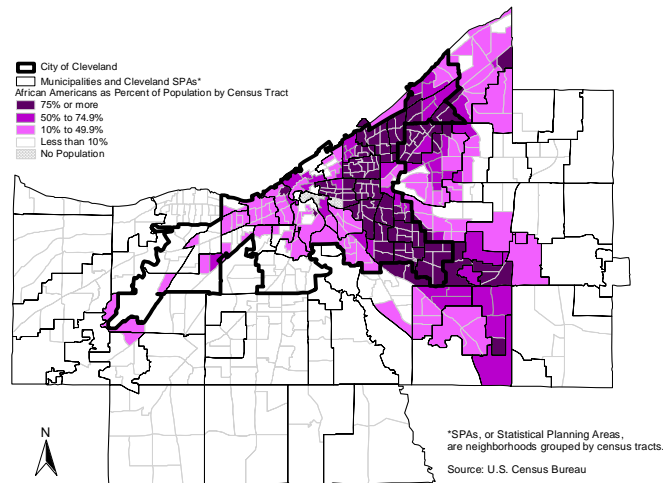
Terry Lenahan and Joseph Ahern, The Center for Community Solutions, Cleveland, Ohio

Nationwide, cancer is the second leading cause of death, accounting for more than one of five deaths. Death rates from cancer have been declining from a peak of 216 per 100,000 in 1990. Still, in 2001, more than half a million deaths were attributable to some form of cancer.¹ The most common types of cancers are lung and bronchus, prostate, female breast, and colorectal. Chances for surviving cancer continue to improve, and evidence suggests that some forms of cancer are preventable through life-style modifications, such as quitting smoking, improving nutrition, increasing exercise, and avoiding sun exposure. For these reasons it is important to disseminate information on prevention, early detection, and treatment.

From 1999 to 2001, the average age-adjusted U.S. cancer death rate was 199 deaths per 100,000 population. Racial disparities existed in cancer mortality rates between Whites and African Americans. From 1997 to 2000, the average cancer death rate among Whites was 201 deaths per 100,000 compared to 256 deaths per 100,000 African Americans. Cancer death rates have been decreasing each year among All Races combined and among Whites and African Americans.

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

Lung cancer is the most common cause of cancer deaths in both men and women. In the year 2000, more than 156,000 deaths nationally were due to lung cancer, meaning that more than 400 people died every day from this type of cancer. Smoking is the number one cause of lung cancer. "Lung cancer may also be the most tragic cancer because in most cases, it might have been prevented – 87 percent of lung cancers are caused by smoking."² Racial disparities exist in lung cancer death rates - African Americans generally have higher lung cancer death rates than Whites. From 1997 to 2000, the average age-adjusted lung cancer death rate among Whites in the U.S. was 57 deaths per 100,000, compared to 65 deaths per 100,000 African Americans. Lung cancer death rates have been decreasing each year among all races combined and among Whites and African Americans.



The cancer and lung cancer death rates are defined as the number of deaths from all cancers and lung cancer, respectively, per 100,000 persons. The rates were age-adjusted to account for differences in age distributions over time. To provide more stable rates, a four-year average was used at the statistical planning area (or SPA, neighborhoods grouped by census tracts) level in Cleveland and at the municipality level in the suburbs. Maps were not differentiated by race. The data are from the Ohio Department of Health for 1997, and 1999 through 2001. Due to an unusually high number of incomplete addresses on the death certificates, deaths from 1998 were excluded. The population base was

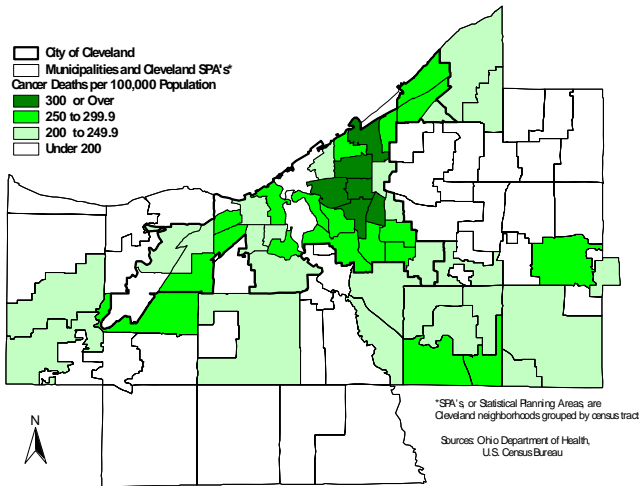
1 National Center for Health Statistics, available on-line at <http://www.cdc.gov/nchs/fastats/cancer.htm>
2 American Lung Association, available on-line at <http://www.lungusa.org>.

estimated for each year using 1990 and 2000 Census data.

All Cancer Deaths: At 223 cancer deaths per 100,000 population, the average age-adjusted cancer death rate in Cuyahoga County was higher than the regional, state, and national averages. The cancer death rate for African Americans was 271 deaths per 100,000 population compared to 215 deaths per 100,000 Whites. From 1997 to 2001, the cancer death rate decreased by 0.5 percent for Whites and All Races combined, and by 0.2 percent per year for African Americans.

The cancer death rate varied by geographic area within the county; Cleveland had the highest death rates and the lowest death rates were in the outer suburbs of Cuyahoga County.

**Average Annual Cancer Death Rate (Age-Adjusted)
 Cuyahoga County, 1997 and 1999 to 2001**



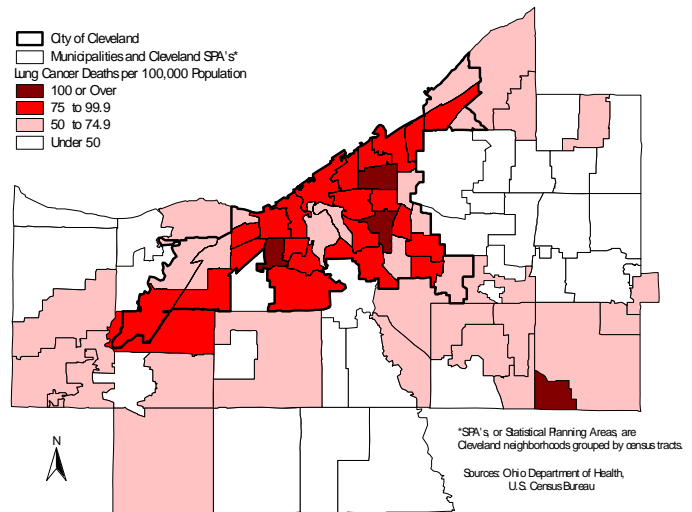
At an average of 261 cancer deaths per 100,000 population, the overall cancer death rate in Cleveland was 31 percent higher than the national rate. The cancer death rate for African Americans in Cleveland (284 per 100,000) was higher than the death rate for Whites (258 per 100,000). Overall, the cancer death rate decreased by about 1 percent per year in each racial category.

The overall age-adjusted cancer death rate in Cuyahoga County suburbs was higher among African Americans (245 per 100,000) compared to Whites (203 per 100,000). The cancer death rate remained stable over the time period, decreasing slightly for Whites and increasing for African Americans.

Lung Cancer Deaths: At 60 deaths per 100,000 population, the average age-adjusted death rate from lung cancer in Cuyahoga County was higher than the national rate of 57 per 100,000, and the rate for African Americans in the county (78 per 100,000) was higher than that for Whites (57 per 100,000). From 1997 to 2001, the lung cancer death rate in the county remained fairly steady for all races together and for Whites, but increased an average of one percent per year for African Americans.

**Average Annual Lung Cancer Death Rate (Age-Adjusted) Cuyahoga County, 1997 and 1999 to 2001
 (map right)**

As with the rate for all cancers, the lung cancer death rate was highest in the city of Cleveland, and lowest in the outer suburbs for all races together, and for Whites and African Americans separately. However, African Americans had a higher rate than did Whites both in the city and in the suburbs.



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In the city of Cleveland, the average death rate from lung cancer was 81 per 100,000 for all races together, 40 percent higher than the national rate. The rate for African-Americans in the city (85 per 100,000) was slightly higher than that for Whites (82 per 100,000). In the suburbs, the average death rate from lung cancer was 51 per 100,000 for Whites and 63 per 100,000 for African Americans.

Maps created by: Terry Lenahan and Joseph Ahern, Policy and Planning Associate in Research, The Center for Community Solutions. Cancer death rates were calculated by Lucy Malakar. Data was geocoded to census tract level by Brian McNamara, GIS specialist. Ellen Cyran, systems programmer/analyst, provided programming for the cancer death rate data. Brian and Ellen are with the Northern Ohio Data and Information Service at the Maxine Goodman Levin College of Urban Affairs, Cleveland State University. “Cancer Deaths, 1997 and 1999 to 2001” and “Lung Cancer Deaths, 1997 and 1999 to 2001” were two of 37 indicators from *Social Indicators 2003: Community Health*, produced by The Center for 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.