

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

*Dedicated to CDC/ATSDR scientific excellence and advancement in disease control and prevention using GIS*



**Selected Contents:** Events Calendar (pp.1-7); Public Health and GIS Literature (pp.7-15); Website(s) of Interest (p. 15); Final Thoughts

2); News from GIS Users (pp.2-7); GIS Outreach 11); DHHS and Federal Update (pp.11-14); (pp.16-18)

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

**To be announced [Tentative: SIG-Epi GIS Web Tool, Pan American Health Organization].** NCHS Cartography and GIS Guest Lecture Series programs are held, 2:00-3:30PM, at the NCHS Auditorium, RM1100, Hyattsville, MD; They have been presented continuously since 1988. Envision is available to offsite CDC/ATSDR locations; Web access is available to all others. 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). [All NCHS Cartography and GIS presentations are open to the public. Contact: Editor, *Public Health GIS News and Information*]

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

\* Second Annual International Conference on Mobile Health: "Community Access to Health Care: Where & When It's Needed," International Mobile Health Association, November 2-4, 2002, Memphis, TN [See: [http://www.intlmobilehealthassn.org/conf\\_2002.html](http://www.intlmobilehealthassn.org/conf_2002.html)]

\* XIX International Methodology Symposium: "Modelling Survey Data for Social and Economic Research," Statistics Canada, November 6-8, 2002, Ottawa, Canada [See: <http://www.statcan.ca/english/services/smnrs.htm>]

\*2002 meeting of the 15th William T. Pecora Memorial Remote Sensing Symposium/Land Satellite Information IV Conference and Exhibition, the American Society for Photogrammetry and Remote Sensing (ASPRS) and the International Society for Photogrammetry and Remote

Sensing (ISPRS) Commission I (Platforms, Sensors and Imagery) Symposium: "Integrating Remote Sensing at the Global, Regional and Local Scale," November 8-15, 2002, Denver, CO [See conference website and details: <http://www.asprs.org/Pecora-ISPRS-2002>]

\*62nd annual ASPH (Association of Schools of Public Health), November 9-12, 2002, Philadelphia PA [See: <http://www.asph.org>]

\* APHA (American Public Health Association) 130th Annual Meeting and Exposition: "Putting the Public Back into Public Health," November 9-13, 2002, Philadelphia PA [See: [www.apha.org/meetings](http://www.apha.org/meetings)]

\*17th annual meeting National Association of Health Data Organizations, Making the Most of Public Health Data: Health Data Initiatives 2003, CDC's Epidemiology Program Office, December 2-3, 2002, Atlanta GA [See: <http://www.nahdo.org/meetings.asp>]

\*GeoHealth 2002: "Supporting Decision Making in Health," December 2-5, 2002, Wellington New Zealand [See: <http://www.geohealth.org.nz>]

\*Fifth Annual Damage Prevention Conference and Exposition (DPC 2002), December 4-6, 2002, San Diego CA [See: <http://www.damageprevention.com>]

\* Annual Primary Care Research Methods and Statistics Conference: "Health Disparities Research," December 6-8, 2002, San Antonio TX [See: <http://cme.uthscsa.edu>]

\* Eighth Annual Maternal and Child Health Epidemiology

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

2

Conference, University of South Florida, CDC, and Chiles Center for Healthy Mothers and Babies, December 11-13, 2002, Clearwater Beach, FL [See: <http://publichealth.usf.edu/conted>]

### 2003

\* Coastal GeoTools '03, National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center, January 6-9, 2003, Charleston SC [See: <http://www.csc.noaa.gov/GeoTools>]

\* National Hepatitis Coordinators' Conference: "Integration of Services for the Prevention of Viral Hepatitis," CDC's National Center for Infectious Diseases and National Immunization Program, January 26-30, 2003, San Antonio, TX [See website at: <http://www.med.umn.edu/cme/html/Hepcoordinators.html>]

\* ISPRS Commission International Workshop: "Visualization and Animation of Reality-based 3D Models," February 24-28, Engadin Switzerland [See: [http://www.photogrammetry.ethz.ch/tarasp\\_workshop](http://www.photogrammetry.ethz.ch/tarasp_workshop)]

\*Annual GITA (Geospatial Information & Technology Association) conference, "Wide Open Spatial Frontiers: Adding Value to Your Business," March 2-5, 2003, San Antonio TX [See website and conference events at <http://www.gita.org/events/annual/26/intro.html>]

\*Community-Campus Partnerships for Health's 7th annual conference, "Taking Partnerships to a New Level: Achieving Outcomes, Sustaining Change," April 26-29, 2003, San Diego [See website at: <http://futurehealth.ucsf.edu/ccph/nationalconference.html>]

\*National Center for Injury Prevention and Control Conference, "Safety in Numbers: Working Together from Research into Practice," CDC, April 28-29, 2003, Atlanta GA [See website and events at: <http://www.cdc.gov/ncipc/conference/CalFAB-Futura.pdf>]

\*ASPRS (American Society for Photogrammetry & Remote Sensing) Annual Conference: "Converge at the Top of the World," May 5-9, 2003, Anchorage, Alaska [See: <http://www.asprs.org>]

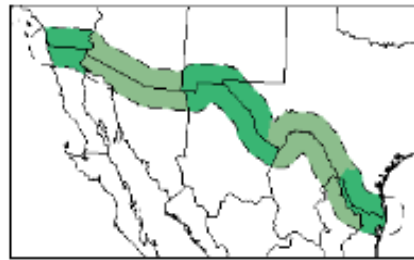
\*2003 National Conference, *Emerging Opportunities for Health Promotion and Health Education: Sailing into New Waters*, Association of State and Territorial Directors of Health Promotion and Public Health Education (ASTDHPPE) and CDC, May 21-23, 2003, San Diego, CA [See conference events and website at: <http://www.astdhppe.org/nationalconference>]

## II. GIS News

(You 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 or ATSDR)

### A. General News and Training Opportunities

1. From **David Parrish**, GIS Coordinator, U.S. EPA, Region 6 (**New U.S.-Mexico Border Environmental Program: Border 2012**): The U.S. Environmental Protection Agency (EPA), the U.S. Department of Health and Human Services, Secretaría de Medio Ambiente y Recursos Naturales (Mexico's Secretariat of Environment and Natural Resources), Secretaría de Salud (Mexico's Secretariat of Health), the U.S. border Tribes, and the environmental agencies from each of the ten U.S.-Mexico border states have developed a new binational border program. The proposed Border 2012



Program is the latest multi-year, binational planning effort to be implemented under the La Paz Agreement and succeeds Border XXI

which ended in 2002. EPA is requesting (see EPA website at <http://www.epa.gov/usmexicoborder>) comment from interested parties and border stakeholders on the draft border plan. [Contact: David at [parrish.david@epa.gov](mailto:parrish.david@epa.gov)]

2. From **Pacific Public Health Training Center News**; (1) **NIOSH-approved Pulmonary Function Testing**, November 15-16, 2002, UCLA, Los Angeles:

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

3

The course provides instruction in all aspects of spirometry through lectures, practicum, and testing. Training is intended for occupational/public health nurses, physicians, technicians, industrial hygienists and others responsible for accurate pulmonary function testing of employees. This NIOSH-approved course has been developed according to current American Thoracic Society Standards for Pulmonary Function Testing. [Contact for this course: Ruth McIntyre-Birkner at [Ruth@mcintyrebirkner.com](mailto:Ruth@mcintyrebirkner.com)]; (2) **National Immunization Program, vaccine-Preventable Diseases:** A scheduled two-day live on-site version of the Epidemiology and Prevention of vaccine-preventable diseases course is scheduled in Norwalk (LA), CA from November 18-19, 2002, and Folsom (Sacramento), CA November 21-22, 2002. For more information and details visit <http://www.cdc.gov/nip/ed/newonsite.htm> [Contact: Sandra Hammer, California Department of Health Services, at email [Shammer@dhs.ca.gov](mailto:Shammer@dhs.ca.gov)]; Coursework Sources: PPHTCLISTERV (<http://www.pphc.org>) is a service of the Pacific Public Health Training Center (PPHTC), which comprise of California Schools of Public Health (Loma Linda University, School of Public Health; UC Berkeley, School of Public Health; UCLA, School of Public Health; San Diego State University, Graduate School of Public Health) and University of Hawaii's School of Nursing and Dental Hygiene.

### **B. Department of Health and Human Services** (<http://www.hhs.gov>)

3. The National Institute of Allergy and Infectious Diseases (NIAID), NIH, has awarded a six-year, \$55.8 million contract to the University of Wisconsin at Madison. This contract will establish a nationwide research network with the **goal of reducing the severity of asthma and preventing the disease in inner-city children**, a group that suffers disproportionately from asthma." Inadequate access to health care and the best available asthma treatments is one of the reasons for higher rates of asthma and asthma-related deaths in inner-city children," said Secretary Tommy Thompson. [See article at: <http://www.nih.gov/news/pr/oct2002/nhlbi30a.htm>]

### **Administration for Children and Families**

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

4. The Administration for Children and Families (ACF) is a federal agency funding state, local, and tribal organizations to provide **family assistance (welfare), child support, child care, Head Start, child welfare**, and other programs relating to children and families. Actual services are provided by state, county, city, and tribal governments, and public and private local agencies. The number of people receiving assistance under the Temporary Assistance for Needy Families (TANF) program declined between December 2001 and June 2002. During that time, the number of recipients of TANF benefits declined by 267,000 to roughly 5 million people—a 5.1 percent decline. The number of families receiving TANF assistance dropped by more than 75,000 to about 2 million—a 3.6 percent decline, according to the statistics from HHS' Administration for Children and Families (ACF). Since the welfare reform law creating the TANF program was enacted on August 22, 1996, the number of welfare recipients has declined by 59 percent. There are more than 7 million fewer people receiving welfare since the passage of the law. [See: <http://www.hhs.gov/news/newsletter/weekly>]

### **Agency for Healthcare Research and Quality** [www.ahrq.gov](http://www.ahrq.gov)

5. Improving outcomes, quality, and **access to health care for America's 70 million children and adolescents** is a critical goal of health services research and central to the mission of the Agency for Healthcare Research and Quality (AHRQ, formerly the Agency for Health Care Policy and Research). Understanding the issues involved in improving the delivery of health care to children and adolescents requires a special research focus.

### **Agency for Toxic Substances and Disease Registry** <http://www.atsdr.cdc.gov>

6. The inaugural issue ATSDR's quarterly **Public Health and the Environment** (formerly Hazardous Substances and Public Health) focuses on **children's environmental health issues**. Dr. Henry Falk, ATSDR Assistant Administrator, states "Because their nervous and other organ systems are undergoing rapid

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

4

development and change, children are uniquely vulnerable to a variety of exposures to hazardous substances from the air, water, and soil." Included in this edition are articles on children's exposures, lead poisoning, children's research centers, the National Children's Study and others. There also is a section on Children's Health Internet resources. [For information see website at: [www.atsdr.cdc.gov/HEC/hsp/home.html](http://www.atsdr.cdc.gov/HEC/hsp/home.html)]

### Centers for Disease Control and Prevention

<http://www.cdc.gov>

7. With **Epi Info 2002** and a personal computer, epidemiologists and other public health and medical professionals can rapidly develop a questionnaire or form, customize the data entry process, and enter and analyze data. Epidemiologic statistics, tables, graphs, and maps are produced with simple commands such as READ, FREQ, LIST, TABLES, GRAPH, and MAP. **Epi Map 2002** displays geographic maps with data from Epi Info 2002. A new version, Epi Info 2002 for Windows retains many features of the familiar Epi Info for DOS, while offering Windows ease of use strengths such as point-and-click commands, graphics, fonts, and printing. [See: <http://www.cdc.gov/epiinfo>]

8. From **Porscha Davis**, NCHS: A **new Long-Term\_Care Listserv** has been established by the National Center for Health Statistics. The purpose of the Long-Term\_Care Listserv is to provide a forum for discussions about and dissemination of data from the National Nursing Home Survey and the National Home and Hospice Care Survey. If you are interested in being a part of the Long-Term\_Care Listserv, we invite you to subscribe to the new long-term care listserv at website [http://www.cdc.gov/nchs/about/major/ahcd/long\\_term\\_care\\_listserv.htm](http://www.cdc.gov/nchs/about/major/ahcd/long_term_care_listserv.htm) or request to be placed on the Listserv by contacting Genevieve Strahan at [gws3@cdc.gov](mailto:gws3@cdc.gov).

### Centers for Medicare and Medicaid Services

<http://cms.hhs.gov>

9. HIPAA is the acronym for the Health Insurance Portability and Accountability Act of 1996. The Centers for Medicare & Medicaid Services (CMS) is responsible for implementing various unrelated provisions of HIPAA. The Administrative Simplification provisions of HIPAA,

Title II, require the Department of Health and Human Services to establish national standards for electronic health care transactions and national identifiers for providers, health plans, and employers. It also addresses the security and privacy of health data. Adopting these standards will improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in health care. [See: <http://cms.hhs.gov/hipaa>]

### Food and Drug Administration

<http://www.fda.gov>

10. The Food and Drug Administration (FDA) recently issued guidance designed to protect the safety of the blood supply against West Nile Virus (WNV). This guidance for industry provides recommendations for assessing the suitability of potential donors and for the proper handling of blood products from donors known or suspected to have WNV infections. The guidance applies to whole blood and blood components intended for transfusion and for use in further manufacturing. It is intended to reduce the risk of WNV through transfusions, particularly in geographical areas where human cases are occurring. FDA is issuing the guidance for immediate implementation.

### Health Resources and Services Administration

<http://www.hrsa.gov>

11. HRSA Internships: The purpose of **ASPH (Association of Schools of Public Health)/HRSA Internship Program** is to offer new opportunities for graduate students pursuing masters and doctoral degrees in public health to further their professional development through direct training and service within the various Bureaus, Offices, and Field Offices of the Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (See: [http://www.asph.org/aa\\_section.cfm/8](http://www.asph.org/aa_section.cfm/8)). The long-term goal of this Program is to provide as many opportunities as possible for hands on field experience in which students can practice the application of skills and knowledge learned in the classroom while benefitting from the knowledge, skills, and expertise of leading experts in the public health practice. In the short-term, students selected for the Program, benefit from a "hands



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

5

on" experience that serves to compliment, and in some instances, complete their public health education. HRSA benefits by utilizing the talents and academic knowledge of former interns in class lectures and in various projects conducted at the schools. The skills attained through this program better prepare students to enter into the practice of public health, and as a result, improve the Nation's health while strengthening the public health workforce. [Contact: Wendy Katz at whk@asph.org]

### Indian Health Service

<http://www.ihs.gov>

12. Northern Plains Indian infants have been dying in excess of expected numbers. The rate of infant deaths is more than twice the national average. The Aberdeen Area of the Indian Health Service (AAIHS) had one of the highest rates of babies dying of what appeared to be Sudden Infant Death Syndrome (SIDS). SIDS is the death of an infant with no medical explanation. This means that after a review of the autopsy, family and medical history, and the death scene, an explanation for the death could not be found. [See: October 10 IHS news release **"SIDS Study of American Indian Tribes of North Dakota, South Dakota, Nebraska, and Iowa Released to Help Prevent Future Infant Deaths."**]

### National Institutes of Health

<http://www.nih.gov>

13. An international research consortium today launched an approximately \$100 million public-private effort to create the next generation map of the human genome. Called the **International HapMap Project**, this new venture is aimed at speeding the discovery of genes related to common illnesses such as asthma, cancer, diabetes and heart disease. Expected to take three years to complete, the HapMap will chart genetic variation within the human genome. By comparing genetic differences among individuals, consortium members believe they can create a tool to help researchers detect the genetic contributions to many diseases. Where the Human Genome Project provided the foundation on which researchers are making dramatic genetic discoveries, the HapMap will begin to make the results of genomic research applicable to individuals.

### Substance Abuse and Mental Health

#### Services Administration

<http://www.samhsa.gov>

14. State level data are presented for 17 different measures relating to substance use. Among persons aged 12 or older, the highest estimated rates of past month use of illicit drugs were in the West and NorthEast; the highest rates of past month use of tobacco were in the South; the highest rates of past year use of cocaine were in the West; South Dakota had the highest rate of alcohol dependence or abuse, and Arizona had the highest rate of illicit drug dependence or abuse. [See: New report **"State Estimates of Substance Use from the 2000 National Household Survey on Drug Abuse: Volume I. Findings"**]

### C. Historical Black Colleges and Universities (HBCUs) and Other Minority Health Activities

[A listing of Historically Black Colleges and Universities (HBCU) may be found at <http://www.smart.net/~pope/hbcu/hbculist.htm>]

15. From **Linda Adams**, NCHS: The September 2002 issue of the *American Journal of Public Health* is focused on **native health** and includes a number of articles on the related subjects. Contents and abstracts are available at: <http://www.ajph.org/current.shtml>.

16. From **American Community Survey Alert- No. 8, Census Bureau (The American Community Survey in American Indian and Alaska Native Areas)**: American Community Survey program managers are soliciting input on proposed plans to implement the American Community Survey in American Indian and Alaska Native Areas. Proposed plans include visits to reservations; discussions with tribal government officials, leaders, and other representatives at events such as the TribalEconomic Summit held in Phoenix, AZ, September 16-19; and meetings with the Census Bureau's American Indian and Alaska Native Advisory Committee at the Racial and Ethnic Advisory Committee meetings, October 2-3, 2002. The Census Bureau recently developed a brochure and is working to produce a video to support American Community Survey operations and outreach activities in American Indian and Alaska Native areas. [Contact: [cmo.acs@census.gov](mailto:cmo.acs@census.gov)]

**PUBLIC HEALTH GIS NEWS AND INFORMATION**

November 2002 (No. 49)

6

17. **HHS Weekly Report:** HHS' Centers for Disease Control and Prevention (CDC) indicate that overall **life expectancy** for African Americans at birth is about 6 years less than for Whites and while African-Americans comprise only 12 percent of the U.S. population, they account for an estimated 54 percent of all new **HIV infections** (see dated reported at HHS website <http://www.hhs.gov/news/newsletter/weekly>). In fiscal year 2003, HHS will spend \$410 million on programs aimed to reduce the impact of HIV/AIDS on racial and ethnic minorities. Funding for this program has more than doubled since it was initiated in fiscal year 1999.

**D. Other Related Agency or Business GIS News**

18. From **Mark Reichardt**, Open GIS Consortium, Inc: The Open GIS Consortium, Inc. (OGC) demonstrated at the October 24-25 "**Emerging Technology Summit 1: Location-Based Services**" conference in Reston, VA, a set of prototype interfaces and schemas that support Location-Based Services (LBS) interoperability. ETS conferences are jointly supported by OGC and the Geospatial Information Technologies Association (GITA). The demonstration marked successful completion of phase 1 of the OGC Open Location Services (OpenLS(TM)) Testbed Initiative. The goal is to enable telecommunications companies to efficiently implement interoperable LBS applications that can seamlessly access multiple content repositories and service frameworks and that work across the world's many different wireless networks and devices. Location-Based Services employ real-time positioning technologies and networked resources to enable a wide variety of applications. These include emergency response (E-911, for example), personal navigator, traffic information service, proximity service, location recall, mobile field service, travel directions, restaurant finder, corporate asset locator, concierge, routing, vector map portrayal and interaction, friend finder, and geography voice-graphics. [Contact: Mark at [mreichardt@opengis.org](mailto:mreichardt@opengis.org)]

19. Celebrating the **fourth annual GIS Day**. The event will be held November 20, 2002, during Geography Awareness Week (November 17-23). 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 real-world applications of this important technology. The event is principally sponsored by the **National Geographic Society, the Association of American Geographers, University Consortium for Geographic Information Science, the United States Geological Survey, The Library of Congress, Sun Microsystems, and ESRI**. [See: <http://www.gisday.com>]

20. From **Jim Aylward**, Harvard Design and Mapping (HDM): HDM ([www.hdm.com](http://www.hdm.com)) has been awarded an SBIR contract with the Centers for Disease Control and Prevention (CDC) to develop a **GIS-based system for Rapid Population Assessment in Complex Humanitarian Emergencies (CHE)**. HDM's research will focus on developing software tools to demonstrate the feasibility and promise of utilizing a Geographic Information System (GIS) combined with GPS and Remotely Sensed data to simplify and streamline rapid population assessments in natural disasters and CHES. Such estimates are key to CDC's ability to successfully prepare and respond to human emergencies. The HDM team includes Stephanie Hulina, and Wei Du, HDM, and subject matter experts from the Johns Hopkins Bloomberg School of Public Health's Center for International Emergency, Disaster and Refugee Studies (CIEDRS). [Contact: Jim, Executive Vice President, at [jim@hdm.com](mailto:jim@hdm.com)]

21. From **Katia Cohen**, GeoLytics: GeoLytics, in association with the Urban Institute and partially funded by the Rockefeller Foundation, is about to release the **CensusCD Neighborhood Change Database (NCDB)**. This product offers four decades (1970, 1980, 1990 and 2000) of tract series data. The power of this product is that the data can be presented with either year-specific boundaries or weighted and normalized to year 2000 boundaries. Data normalization allows easy time series analysis with identical geographic boundaries over time. For example, 1980 data can be produced in chart or map form with the true 1980 definitions, or redrawn using the 2000 boundary designations. For this

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

7

and other census products see <http://www.geolytics.com>.  
[Contact: Katia at [Katia@geolytics.com](mailto:Katia@geolytics.com)]

### III. GIS Outreach

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

\* From **Maritza Rojas**, University of Carabobo, Valencia, Venezuela: I am a Venezuelan toxicologist and I have been at CDC Atlanta for a one month course on Applied Epidemiology. I am the Director of the Center for Toxicological Investigations of the University of Carabobo (CITUC), in Valencia, Venezuela. We do research and we are beginners in GIS. We would like to pursue GIS development and would like to know if there is any GIS software that could be donated by Public Health GIS Users to our Center. [Contact: Maritza at [martini@telcel.net.ve](mailto:martini@telcel.net.ve)]

\*From **Jeff Wilson**, University of Canterbury, Christchurch, New Zealand: I am doing research on air pollution (particulate air pollution PM10, PM2.5, or PM1.0) and cardio-respiratory health effects using GIS. Would you please point me towards any individuals in your organization working on this topic? I would like to discuss methods and work with people doing research in this area. [Contact: Jeff, Department of Geography, at [j.wilson@geog.canterbury.ac.nz](mailto:j.wilson@geog.canterbury.ac.nz)]

### IV. Public Health GIS Presentations and Literature

***NCHS Cartography and GIS Guest Lecture Series***  
***Slides Available:*** The September 19, 2002 NCHS Cartography and GIS Guest Lecture Series presentation, **“XML Web Services and the Enterprise Architecture: Implications for DHHS Agencies and Geospatial Data Activities,”** by Brand Niemann, Computer Scientist and XML/P2P/WebServices Specialist, Office of Environmental Information, U.S. Environmental Protection Agency, is now available in PowerPoint slides at the following website <http://130.11.44.140/XML%20Web%20Services%20for%20DC9191.ppt>.

***CDC Emerging Infectious Diseases and MMWR  
Emerging Infectious Diseases***

***Emerging Infectious Diseases*** is indexed in Index Medicus/Medline, Current Contents, Excerpta Medica, and other databases. Emerging Infectious Diseases 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 **October 2002** edition is currently available at the CDC web site <http://www.cdc.gov/ncidod/EID/index.htm> and is devoted to articles of potential GIS related interest related to bioterrorism and anthrax. The **November 2002** edition is provided in advance at the CDC website <http://www.cdc.gov/ncidod/eid/upcoming.htm>, and is devoted to tuberculosis.

### ***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 <http://www.cdc.gov/subscribe.html> and access the MMWR online at <http://www.cdc.gov/mmwr>]: Vol. **51**, No. **43**- Primary and Secondary Syphilis-United States, 2000-2001; Public Health Dispatch: Investigations of West Nile Virus Infections in Recipients of Blood Transfusions; West Nile Virus Activity-United States, October 24-30, 2002; Surveillance Summaries, Vol. **51**, No. **SS-7**- *Surveillance for Influenza-United States, 1997-98, 1998-99, and 1999-00 Seasons*; Vol. **51**, No. **41**- West Nile Virus Activity-United States, October 10-16, 2002, and Update on West Nile Virus Infections in Recipients of Blood Transfusions; Vol. **51**, No. **40**- Iron Deficiency-United States, 1999-2000; Usual Sources of Cigarettes for Middle and High School Students-Texas, 1998-1999; West Nile Virus Activity-United States, October 3-9, 2002; Notice to Readers: Recommended Adult Immunization Schedule-United States, 2002-2003; Notice to Readers: National Lead Poisoning Prevention Week; Notice to Readers: First World Report on Violence and Health; Vol. **51**, No. **38**- Trends in Sexual Risk Behaviors Among High School Students-United States, 1991-2001; West Nile Virus Activity-United States, September 19-25, 2002, and Michigan, January 1-September 24, 2002; Notice to

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

8

Readers: Expansion of Eligibility for Influenza Vaccine Through the Vaccines for Children Program; Notice to Readers: Advancing the Health of Women: Prevention, Practice, and Policy Conference; Vol. **51**, No. **37**- Acute Flaccid Paralysis Syndrome Associated with West Nile Virus Infection-Mississippi and Louisiana, July-August 2002; Human Rabies-Tennessee, 2002; Progress Toward Poliomyelitis Eradication-India, Bangladesh, and Nepal, January 2001-June 2002; West Nile Virus Activity-United States, September 12-18, 2002, and Ohio, January 1-September 12, 2002; Vol. **51**, No. **36** State-Specific Prevalence of Obesity Among Adults with Disabilities-Eight States and the District of Columbia, 1998-1999; Progress Toward Global Dracunculiasis Eradication, June 2002; West Nile Virus Activity-United States, September 5-11, 2002, and Texas, January 1-September 9, 2002; Vol. **51**/CDC Alert- Notice to Readers: Updated Post-Event Smallpox Response Plan and Guidelines; Vol. **51**/Special Issue- Injuries and Illnesses Among New York City Fire Department Rescue Workers After Responding to the World Trade Center Attacks; Impact of September 11 Attacks on Workers in the Vicinity of the World Trade Center-New York City; Community Needs Assessment of Lower Manhattan Residents Following the World Trade Center Attacks-Manhattan, New York City, 2001; Syndromic Surveillance for Bioterrorism Following the Attacks on the World Trade Center-New York City, 2001; Deaths in World Trade Center Terrorist Attacks-New York City, 2001; Notice to Readers: New Classification for Deaths and Injuries Involving Terrorism; Notice to Readers: Revision to the MMWR Editorial Policy and Publication Schedule in Response to Terrorism and Other Public Health Emergencies Vol. **51**, No. **35**- Self-Reported Increase in Asthma Severity After the September 11 Attacks on the World Trade Center-Manhattan, New York, 2001; Notice to Readers: Protecting Building Environments from Airborne Chemical, Biologic, or Radiologic Attacks; West Nile Virus Activity-United States, August 29-September 4, 2002.

\*\*\*\*\*

### Journal Articles and Other Submissions

#### **Anthrax: GIS Helps Investigators Hunt for the Deadly Spores**

**Gerald B. Curtis, Ron Stoddard (CDC), Dennis Y.**

**Kim** (AMGEN Inc.), **Jayanth K. Devasundaram** (ESRI, Inc.) Excerpts from Geoplace.com: During Oct. 19-21, 2001, four postal employees who worked at the U.S. Postal Service (USPS) Brentwood Mail Processing and Distribution Center (PDC) in Washington, D.C. were hospitalized with diagnosed inhalational anthrax; two of the employees died. On Oct. 21, the Brentwood facility was closed, and employees started taking post-exposure prophylactic antibiotics. CDC became responsible for determining the extent of anthrax contamination in the Brentwood facility and was charged with conducting an epidemiologic investigation of confirmed cases and helping to prevent additional cases.

At the onset of the investigation, however, there were no available electronic maps of the facility that could be used in a GIS. A few days after the investigation was initiated, a postal employee provided a floor plan--a tattered eight- by 11-inch schematic blueprint that had to be converted to a GIS-compatible format. The floor plan was taken to a local copy and print store where it was scanned and saved as a TIFF file, which was imported into ESRI Inc.'s ArcView GIS 3.2 software as an image layer.

To spatially encode facility areas, interviewed employees placed colored stickers on a photocopied page of the facility layout to indicate where they usually worked and took breaks. Postal authorities provided information on where cases worked, and CDC response team members indicated the locations of environmental samples. The information allowed CDC to spatially identify in the 500,000-square-foot facility the locations of cases' workstations, other postal employees' workstations and break areas, and environmental samples. CDC created feature layers to add point locations and corresponding data for environmental samples collected at the Brentwood postal facility. Layers included, from top to bottom, the location of employees with confirmed anthrax, work and break stations of interviewed postal employees, swab and air sampling locations, wipe sampling locations and vacuum sampling locations.

Using GIS, CDC investigators saw that the primary work locations of four employees confirmed with inhalational anthrax were contaminated. GIS allowed investigators to visually assess the flow of mail and points of possible contamination. Visual inspection of the maps



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

9

demonstrated that contamination was widespread. More sophisticated spatial pattern analyses could have been performed to correlate serology results with locations of samples positive for anthrax. But at the time of the initial investigation, environmental sampling and serology results weren't available. Had there been data for air flows and ventilation patterns, it would have been possible to construct a visualization of the pathways of the anthrax spores within the building.

From a public health perspective, GIS capabilities enable emergency response teams to rapidly respond to and minimize the effects of such attacks. According to Gerard Rushton, a geography professor at the University of Iowa, the public-health community hasn't learned the lessons from the Oklahoma bombing to use GIS effectively. "The nation is fundamentally unprepared for a concerted response to major disasters in densely populated areas and is in urgent need of policy to redress this deficiency," he says. One lesson learned from the anthrax investigation is that the development of standard procedures for GIS applications in crisis situations could improve the effectiveness of future responses. [Article at <http://www.geoplace.com/gw/2002/0210/0210thx.asp>]

\*\*\*\*\*

### Special issue on SEER-Medicare Data

*Medical Care*, August 2002(40):8 (Supplement)

**Brief Description of the SEER-Medicare Database:** The SEER-Medicare data reflect the linkage of two large population-based sources of data that provide detailed information about elderly persons with cancer. The data come from the Surveillance, Epidemiology and End Results (SEER) program of cancer registries that collect clinical, demographic and cause of death information for persons with cancer and the Medicare claims for covered health care services from the time of a person's Medicare eligibility until death. The linkage of these two data sources results in a unique population-based source of information that can be used for an array of epidemiological and health services research. For example, investigators using this combined dataset have conducted studies on patterns of care for persons with cancer before a cancer diagnosis, over the period of initial diagnosis and treatment, and during long-term follow-up. [See: Seer-Medicare data information at: <http://healthservices.cancer.gov/seermedicare/>]

**Articles: Overview of the SEER-Medicare Data: Content, Research Applications, and Generalizability to the United States Elderly Population**, JL. Warren, CN. Klabunde, DS, PB Bach, GF Riley; **Patient Demographic and Socioeconomic Characteristics in the SEER-Medicare Database Applications and Limitations**, PB Bach, E Guadagnoli, DSchrag, N Schussler, JL Warren; **Assessing Comorbidity Using Claims Data: An Overview**, CN Klabunde, JL Warren, JM Legler; **Measuring Breast, Colorectal, and Prostate Cancer Screening With Medicare Claims Data**, JL Freeman, CN Klabunde, N Schussler, JL Warren, BA. Virnig, GS Cooper; **Use of SEER-Medicare Data for Measuring Cancer Surgery**, GS Cooper, B Virnig, CN Klabunde, N Schussler, J Freeman, JL Warren; **Studying Radiation Therapy Using SEER-Medicare-Linked Data**, BA Virnig, JL Warren, GS Cooper, CN Klabunde, N Schussler, J Freeman; **Utility of the SEER-Medicare Data to Identify Chemotherapy Use**, JL Warren, LC Harlan, A Fahey, BA Virnig, JL Freeman, CN Klabunde, GS Cooper, KB Knopf; **Measuring Complications of Cancer Treatment Using the SEER-Medicare Data**, AL Potosky, JL Warren, ER Riedel, CN Klabunde, CC Earle, CB Begg; **Methodological Issues in the Use of Administrative Claims Data to Study Surveillance After Cancer Treatment**, AB Nattinger, MM Schapira, JL Warren, CC Earle; **Identifying Cancer Relapse Using SEER-Medicare Data**, CC Earle, AB Nattinger, AL. Potosky, KLang, R Mallick, M Berger, JL Warren; **Linking Physician Characteristics and Medicare Claims Data Issues in Data Availability, Quality, and Measurement**, LM Baldwin, W Adamache, CN Klabunde, K Kenward, C Dahlman, JL Warren; **Identifying and Measuring Hospital Characteristics Using the SEER-Medicare Data and Other Claims-Based Sources**, D Schrag, PB Bach, C Dahlman, JL Warren; **Estimating Health Care Costs Related to Cancer Treatment From SEER-Medicare Data**, ML Brown, GF Riley, N Schussler, R Etzioni.

\*\*\*\*\*

*Titles*

**Disease outbreak detection system using syndromic data in the greater Washington DC area**

PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

10

Lewis MD, Pavlin JA, Mansfield JL, O'Brien S, Boomsma LG, Elbert Y, Kelley Pw. *Amer J of Prev Med*, 23 (3): 180-186 OCT 2002;

**Making health data maps: a case study of a community/university research collaboration**, Buckeridge DL, Mason R, Robertson A, Frank J, Glazier R, Purdon L, Amrhein CG, Chaudhuri N, Fuller-Thomson E, Gozdyra P, Hulchanski D, Moldofsky B, Thompson M, Wright R. *Soc Sci & Med*, 55 (7): 1189-1206 OCT 2002;

**Multisensor fusion over the World Trade Center disaster site**, Rodarmel C, Scott L, Simerlink D, Walker J *Opt Engin*, 41 (9): 2120-2128 SEP 2002;

**Community participation and geographic information systems**, Craig WJ, Harris TM, Weiner D, Balram S, *Environment And Planning a*, 34 (9): 1711-1712 SEP 2002;

**Spatial analysis of human granulocytic ehrlichiosis near Lyme, Connecticut**, Chaput EK, Meek JI, Heimer R. *Emerg Infect Dis*, 8 (9): 943-948 SEP 2002;

**Where the jobs are: Employment access and crime patterns in Cleveland**, Wang FH, Minor WW. *Annals of the Assoc of Amer Geog*, 92 (3): 435-450 SEP 2002;

**Data quality and the spatial analysis of disease rates: congenital malformations in New York State**, Forand SP, Talbot TO, Druschel C, Cross PK. *Health & Place*, 8 (3): 191-199 SEP 2002;

**Identifying environmental risk factors for endemic cholera: a raster GIS approach**, Ali M, Emch M, Donnay JP, Yunus M, Sack RB. *Health & Place* 8 (3): 201-210 SEP 2002;

**Tapping the Web for GIS and mapping technologies: For all levels of libraries and users**, Kowal KC. *Info Tech and Libraries*, 21 (3): 109-114 SEP 2002;

**The Geographic Distribution of Soil Lead Concentration: Description and Concerns**, Daniel A. Griffith, *URISA Journal* 14(1), 2002 [See: <http://www.urisa.org/Journal/JrnlContents14-1.htm>];

**Conceptual and practical issues in the detection of local disease clusters: a study of mortality in Hamilton, Ontario**, Burra T, Jerrett M, Burnett RT, Anderson M. *Canadian Geographer-geographe Canadien*, 46 (2): 160-171 SUM 2002;

**A cost comparison of two malaria control methods in Kyunggi Province, Republic of Korea, using**

**remote sensing and geographic information systems**, Claborn DM, Masuoka PM, Klein TA, Hooper T, Lee A, Andre RG. *Amer J of Trop Med And Hyg*, 66 (6): 680-685 JUN 2002;

**Use of a geographic information system to identify and characterize areas with high proportions of distant stage breast cancer**. Roche LM, Skinner R, Weinstein RB. . *J Public Health Management Practice* 2002; 8(2): 26-32. **Abstract:** A **spatial scan statistic** was used to search for geographic areas with significantly elevated proportions of women diagnosed with distant stage breast cancer in New Jersey in 1995-1997. The identified areas then were mapped and characterized using data from the 1990 US Census and locations of mammography facilities. These areas' population characteristics included relatively high proportions of black or Hispanic women and linguistically isolated households. Targeted education and screening programs using this information may increase the diagnosis of breast cancer in the early stages, thereby reducing breast cancer mortality.

\*\*\*\*\*

**Other Literature: Special Reports**

*Childhood Asthma*

**A Metropolitan Health Commission:  
Discussion Paper**

**Jim M. Celenza, Rhode Island Committee on  
Occupational Safety and Health**

[**Overlay a map of childhood asthma cases by residence with childhood lead cases and they will share many of the same sites. Both conditions are cemented in housing health. All too often we isolate each issue and press solutions that are directed towards that issue alone. But if they are interconnected a more comprehensive public health approach is called for**] We have in the general metropolitan area (Providence, Pawtucket, East Providence, Cranston, Central Falls) a high concentration of public health problems and concerns (preventable lung disease, lead poisoning, asthma, air quality, communicable diseases, diabetes, etc). The same metro area possesses a range and critical mass of major health institutions such as several key hospitals RIH, Miriam, Women's and Infants, Roger Williams, Memorial, Brown's medical school, nursing schools at Rhode Island College and

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

11

CCRI, health centers, the Departments of Health, and Environmental Management, and various free standing health projects and programs. (We should include emergency response services as standing health agencies since they respond to many specific health issues, traffic accidents, carbon monoxide hazards, and will be the front line foot soldiers for any deliberate biological or chemical releases).

What we are missing is a coherent institutional governmental presence that helps a) focus and direct specific metropolitan health initiatives and b) sustain and coordinate many of the separate public health programs and agencies. Thus, a Metropolitan Health Commission MHC. The MHC commission as envisioned would be made up of political representatives from each political jurisdiction affected, health care institutions, community resident and state and local health officials. (A separate health technical advisory committee composed of health professionals (a mini CDC), would provide scientific and medical analysis, and make recommendations in this regarding specific public health issues.)

The MHC charge is to focus on public health issues and not duplicate existing medical services and programs. For example we know that during heat waves elderly residents may be at high risk. A MHC would serve to support primary responders (e.g. fire, police) and provide comprehensive policy (how and where to locate air conditioned areas etc). Key charges of the MHC:

**Develop targeted public health strategies.** Clearly there is a real need to develop coherent metro strategies for lead and asthma. These would automatically involve relationships with housing and housing agencies. Housing is a complex mix (especially in those urban areas most impacted) involving hard-nosed market forces, moving populations, complex liability, insurance, mortgage and banking practices, local politics that infuses code enforcement that resembles a plot in a Shakespeare play. The commission would at least present an informed public health voice in that arena.

**Evaluate current public health strategies.** The MHC would be an open venue to frankly discuss what works and what does not, and to help formulate more practical and strategic programs based on "evidence based medicine" to help us work towards primary prevention on a wide range of public health initiatives.

**Assist and support public agencies whenever public health issues are involved.** Domestic and family violence issues, for example, are currently dealt with by law enforcement. The MHC could help train and support law enforcement agencies in this area. CDC has announced a comprehensive plan for smallpox vaccination-- a two-tiered system. Much of this will fall upon local institutions. A MHC could function to coordinate the various elements: rounding up infectious disease health professional from various hospitals, developing vaccination sites, screening, arranging for coordinating data and outcomes.

**Serve as a clearinghouse** for the many separate health programs, projects and agencies: e.g. HELP, Asthma initiatives, Brown medical/environmental projects impacted the metro area.

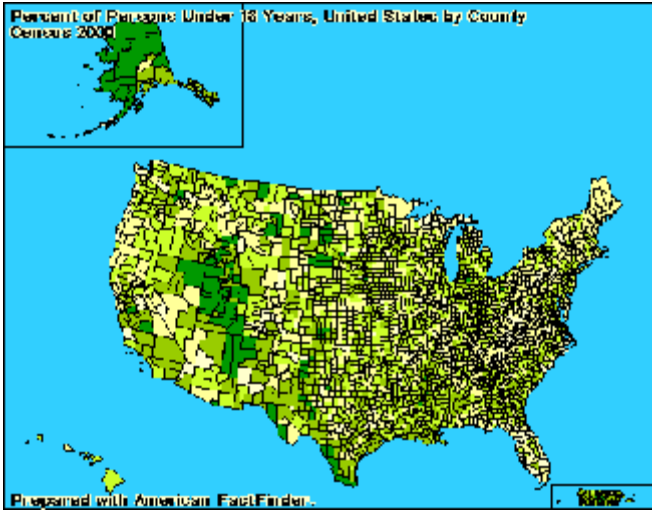
**Support and or fund research projects** to better assess and evaluate programs and initiatives. There are several hospital based and academic health institutions throughout the metro region; some already conduct evaluations of different programs and projects that impact citizens in the metro area. We have not addressed funding and financials. This discussion is meant only to stimulate some thought on the idea and see how far it can go. [Contact: Jim M. Celenza at jobhealth@juno.com]

\*\*\*\*\*

### V. Related Census, HHS, FGDC and Other Federal Developments

**The 2002 TIGER/Line files** (Topologically Integrated Geographic Encoding and Referencing system) contain few, if any, updates to street features or address ranges from the Census 2000 versions of the TIGER/Line files. Some additional features may have been added in 20 counties where the Census Bureau improved the street feature coordinates. The Census Bureau expects the 2004 TIGER/Line files to be the first version of the TIGER/Line files to include a significant number of updates to street features or address ranges.

**On-Line Mapping Resources** (see <http://www.census.gov>) include American Fact Finder (see map inset of under 18 year old population in 2000), the data dissemination tool for accessing and mapping Census 2000 and other census data, and **TIGER Mapping Services**, maps based on 1998 TIGER/Line® files, and 1990 Decennial Census data..



**Legend**

**Data classes**

Percent	
2.0 - 21.7	
21.8 - 24.8	
24.9 - 27.7	
27.8 - 32.3	
32.4 - 46.6	

\*\*\*\*\*

**The American Community Survey and Emergency Planning**

How can information from the American Community Survey, Census Bureau, help emergency response providers? What is the

role that current information can play in developing plans for recovery from natural disasters or other catastrophic events, or in assessing the long-term impact of these events on the economy, health, housing, and physical infrastructure, including roads, public buildings, and utilities? Whether it's a chemical spill, earthquake, fire, hurricane, or other event, current information on the affected population is critical for emergency planners involved in emergency response, disaster relief, or long-term recovery.

When fully implemented, the American Community Survey will provide federal, state, local, and tribal government officials with up-to-date population and housing information to help them respond to events and determine whether such events are limited in scope or have catastrophic consequences for an area, state, or region. Current information on the numbers and characteristics of the population are essential to develop emergency evacuation plans and identify what kinds of medical assistance and other services are needed.

Here are some examples of how the American Community Survey contributes to emergency planning:

\*The American Community Survey's small-area data on commuting patterns and schooling can provide critical information about the physical location of the population during the day. Knowledge of daytime populations can help planners develop appropriate strategies and procedures to route people through and out of a city in the event of a catastrophic event, identify the best locations for emergency shelters, or assess the need to stockpile vital food and medical supplies; \*Information on the languages spoken in an area provides guidance on whether flyers, electronic broadcasts, or other means of disseminating emergency information are needed in languages other than English; and, \*Areas affected by catastrophic events can lose their populations quickly. Measuring the effect of population and job losses requires an ongoing, current source of statistics on households, housing, and characteristics such as the availability of public utilities. As affected areas recover, knowledge of the rate at which the local population rebounds, if and how their characteristics have changed, and the effects of the rebound, can help policy-makers gauge the new needs and resources, as well as any lasting impact of the event on the local economy. Current, accurate information is a first step in planning for and responding to emergencies.

\*\*\*\*\*

**CDC Awards Funds for Environmental Public Health Tracking**

[Editor: In the March 2002 edition, *Public Health GIS News and Information*, I wrote about efforts to construct the new CDC and ATSDR initiative, a national environmental public health tracking network. This new program is moving forward. See press release at <http://www.cdc.gov/od/oc/media/pressrel/r021008b.htm> dated October 8, 2002] The Centers for Disease Control and Prevention (CDC) has taken a significant step toward creating a national environmental public health tracking network by awarding \$14.2 million in grants to 20 state and local health departments and three schools of public health. The goal of CDC's Environmental Public Health Tracking Program is to develop a standards-based environmental public health tracking network that allows direct electronic data reporting and linkage of health effect, exposure and hazard data, which can operate with other public health systems. Health effects include birth



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

13

defects, developmental disabilities, asthma and chronic respiratory disease, cancer, neurologic diseases, and acute effects such as lead poisoning, pesticide poisoning, and carbon monoxide poisoning. Environmental factors include the broad categories of chemicals, physical agents, biomechanical stressors and biologic toxins. "This new program provides a strategic opportunity to address some of the most challenging public health problems," said Dr. Julie Gerberding, CDC's Director. "By linking environmental and health data on a national level, we will be better equipped to identify problems and effective solutions, thereby reducing the burden of environment-related diseases on the American people."

These grants will help public health officials to obtain quality data needed to quantify the link between the environment and health. The state and local health departments are being funded to (1) build environmental public health capacity; (2) increase collaboration between environmental and health agencies; (3) identify and evaluate existing data systems; (4) build partnerships with nongovernmental organizations and communities; and (5) develop model systems that link environmental and human health data and that can be applied to other states or localities. These agencies will use this information to develop public health activities aimed at preventing and controlling environmentally-related diseases. The schools of public health, in turn, will support the efforts of state and local health departments and will investigate possible links between health effects and the environment.

This issue was initially identified in a 2001 Pew Environmental Health Commission report called *America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network*. In this report, the Commission stated that the existing environmental health system was inadequate and fragmented and recommended a "Nationwide Health Tracking Network for disease and exposures."

Surveys conducted by the Pew Commission in the 50 states and selected local jurisdictions found that many of their public health departments have little capacity for environmental public health tracking. As a result, fundamental information about community health status and environmental exposures often is not available for disease prevention, policy and scientific purposes. Congress responded by appropriating funding for CDC to

begin developing and implementing a nationwide environmental public health tracking program and to develop environmental health capacity in state and local health departments. The focus of this effort is on chronic disease and other noninfectious health effects that may be related to environmental exposures. [For a full copy of the report and Recommendation #3B on the related role of GIS, contact CDC at (404) 639-3286]

### **Federal Geographic Data Committee (FGDC)**

[The Federal Geographic Data Committee (FGDC) is an interagency committee, organized in 1990 under OMB Circular A-16, that 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 17 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>]

### **More on Geospatial One-Stop**

(See: Portal Concept at <http://gai.fgdc.gov/portal/#docs>)

The Geospatial One-Stop (GOS) is a part of the new federal E-Government initiative to improve the effectiveness, efficiency, and customer service throughout all layers of government. The Geospatial One-Stop is one of 24 US Office of Management and Budget (OMB) E-Government initiatives to improve effectiveness, efficiency, and customer service throughout government. Geospatial One-Stop will provide a geographic component for use in all Internet-based E-Government activities across local, state, tribal and federal government agencies. Among other contributions, the Geospatial One-Stop will provide a **Portal** to reliable geospatial data of uniform quality. **The vision of the Geospatial One-Stop Portal is to allow users to view and obtain the data they want, for just that part of the country they are concerned about, without needing to know the details of how the data are stored and maintained by independent organizations.**

For example, the federal government might maintain a server providing interstate highway data, a state might serve data about the highways under its

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

14

jurisdiction, and a city might serve urban street data. A user should be able to view a map including roads from all of these jurisdictions simultaneously, letting the Portal automatically contact the necessary servers and combine the data. Furthermore, the user should be able to view detailed documentation about the data and its provenance(s) if desired.

The Portal builds upon the National Spatial Data Infrastructure (NSDI) Clearinghouse Network. That network catalogs data that have been documented according to the metadata standard published by the US Federal Geographic Data Committee (FGDC). Users can search for the Clearinghouse and be referred to those data. The Portal goes the next step by providing direct access to a subset of the data in the catalog--specifically, to those data collections which use specific types of data access methods. The critical element in enabling a Portal to be established is **open standards and specifications**.

The Geospatial One-Stop is based on open standards that are defined collaboratively by a variety of stakeholders, are freely published, and are able to be implemented by any vendor or organization. Three broad classes of standards and specifications are relevant to the Portal and its data providers: (1) Access to data and maps will be provided according to Open GIS Consortium specifications. In particular, the Web Map Service, Web Feature Service, and Web Coverage Service define methods for requesting data via the web in the geographic area of interest; (2) Data will be documented according the FGDC Content Standard for Digital Geospatial Metadata. Metadata provides detailed information about the data; (3) There are seven geospatial data themes that are considered to be of fundamental importance. Known as "Framework Data," these themes are: Elevation, Orthoimagery, Hydrography, Transportation Networks, Government Units (administrative boundaries), Cadastral (property boundaries), and Geodetic Control. Data content standards for these themes are now under development by another component of the Geospatial One-Stop initiative. [The Portal may also access other, non-Framework data as well]

### Sample Scenario

[<http://gai.fgdc.gov/portal/sampleScenarioGOS-TP-AnnexB.doc>]-The following scenario provides insight into what types of activities the

GOS Portal infrastructure should be able to support]

**Problem:** A Data User requires the synthesis of a map that includes geologic, soil properties, road network, water lines, demographic information, and public service facility locations such as hospitals and schools to be plotted for an urban area just impacted by an earthquake. No single agency is responsible for this variety of geospatial data yet "best-available" information must be assembled and printed for use by field personnel in paper and electronic form within 6 hours.

**Response:** The Data User queries a comprehensive on-line catalog of digital geospatial data sets that includes federal, state, local, and commercial data sources' metadata. This on-line catalog is available via the Geospatial One-Stop Portal. The query interface allows the user to define a geographic area of interest and to search upon words describing the data content for the themes and features listed above. A list of many possible data sets is prepared after several minutes of search, with much of the data being available on-line for feature level access. A visual review of the metadata reveals six optimal digital data layers commercially or freely available from Provider Organizations, including: \*Geology (1:100,000-scale source geologic quadrangle); \*Earthquake Epicenters (USGS Earthquake Information System x,y,z, magnitude); \*Soils (County-level 1:24,000-scale source County Soils map with related attributes); \*Water lines (1:2,000-scale source network from city); \*Demographic Information (Commercially enhanced Census Tract level demography); and, \*Facilities (City and USGS updated Geographic Names Info System database). Additionally, the road transportation data over the area of interest includes data from four Provider Organizations, the State of XYZ, the State of ZYX, ABC County, and CBA County.

Once discovered through the Clearinghouse registry, a session is invoked in the Smart Client to begin connections with the remote data services. Sessions are established with each of the ten systems based on the connection parameters stored in the linkage element of the metadata entries. A list of themes is displayed and the geographic extent of each of the themes becomes known to the client, and a default geographic extent is set by the client. The user selects a preferred coordinate system template for the rendering of the information. In the case

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

15

of the roads data, the user is prompted to indicate which data to display in the case where redundant data exists. The user selects to display the county level data over the state level data whenever possible.

Using a cascading list, the user manipulates the themes and subcategories of information to restrict what is yet to be displayed. Within a theme certain feature types are listed as the next part of the cascade, and the user highlights the features of interest, the elements in the picklist showing the name of the feature type and showing the default symbolization. Default symbology is delivered to the smart client when the data set request was initialized, but it can be overridden by the user by clicking on the feature type symbol icon.

As each data theme is activated in the drawing window by clicking on the theme list, the screen resolution and geographic extent of the client are passed to the remote map server and graphic information is returned to the window. This can be transferred in the form of an opaque or transparent bitmap for screen-resolution rendering or as simplified chains that represent slightly more than the portion of the data set currently in the client's geographic window, adequate for the resolution of the screen. This streaming of only essential spatial data vectors is very efficient and reflects the current state and relevant detail of the remote data set.

The data layers are drawn but look quite dense in this screen covering many square miles within the city. The user can pan or zoom the image, triggering redraw requests to the data servers. Incremental pans can be drawn from memory since the previous delivery included some over-edge data. Wider pans or zooms require redelivery of the vector and raster information to the client. The user adjusts the view to encompass the full area of interest for the emergency management logistics.

A toggle of the Screen/Paper button to the "Paper" setting submits requests to the servers to contribute a more detailed (300dpi) contribution of each layer to the client's layer mapping engine, including the selected feature control doubling as a legend. The user is able to zoom and review the detailed results with a roaming virtual lens and submit the resulting map to a plotter. Since it took some work to create it, the map is saved based on the contributed information so it can be reprinted again at a later date. The client program is

terminated and the sessions to each data server are dropped. The user walks to the plotter to assess the results and start passing out the maps to local authorities.

This scenario is an eminently achievable one illustrating the beginnings of geodata interoperability based on the movement of simple features and producer-defined data on top of them. It verges on the ability of being able to perform geoprocessing based on the delivered vector information, and capitalizes on the interest of governmental agencies in providing live access to geospatial information without requiring massive downloads, import, and conscious uncompression. Accounting or subscription systems can be established on this framework to allow for metered use of commercial data by users, since the full depth of the data base is not exposed for copying by the end-users.

### Web Site(s) of Interest for this Edition

<http://www.lib.umich.edu/govdocs/sthealth.html> The University of Michigan Map Library contains a wide array of cartographic materials, including maps, atlases, gazetteers, geographical dictionaries, and reference works. The Library is also a campus resource center for Geographic Information Systems (GIS), providing access to software and data in support of instruction and research. The University Library Digital Spatial Data Catalog is an on-line catalog of on- and off-line digital spatial data. Contributions of metadata to the catalog and data to the University Library's spatial data server are welcome.

<http://healthcybermap.semanticweb.org> HealthCyberMap is a Web-based service that aims at mapping parts of medical/health information resources in cyberspace in novel semantic ways to improve their retrieval and navigation. This is achieved through intelligent categorisation and interactive hypermedia visualisation of the medical/health information cyberspace using metadata (information about information resources), clinical codes (to describe resource topics) and GIS (Geographic Information Systems) technologies. The HCM pilot currently provides six different interfaces to its metadata base, which has over 1600 resource records in it.

*Final Thoughts*

**GeoHealth 2002: “Supporting Decision Making in Health”  
A New Milestone in an Important Public Health GIS Tradition**

GIS public health conferences, for audiences especially at national and international scales, are important to public health. They are an integral part of the greater public health landscape. In that moment of time and space, public health GIS conferences assure communication that transcends from an individual to our collective geospatial intelligence. We attend with anticipation and depart with a renewed sense of purpose and inspiration. These can be extraordinary events.

I am reminded of the 1998 “GIS in Public Health” conference (actually 3<sup>rd</sup> national conference) that was held in San Diego, CA and lead sponsored by the Agency for Toxic Substances and Disease Registry (ATSDR). Even today people will inquire as to when the next one is planned. As a member of that Planning Committee, and participant in a variety of conference activities, I found myself immersed in the excitement generated by this event. It was totally focused on public health. It proved to be a melting pot for many disciplines and occupations. Since that time, several other national and international public health conferences, sponsored by industry and academia, have successfully occurred.

GIS public health conferences require much advance planning and often scarce resources. This may be especially true in government where conference resources for events of this magnitude can be limiting. I want to call attention to the “other side” (for those in the Western Hemisphere) of the International Dateline, where a new government-sponsored international GIS public health conference is about to take place. In our greater public health landscape, **GeoHealth 2002: “Supporting Decision Making in Health,”** (December 2-5, 2002, Wellington) represents an important milestone for New Zealand and continuation of an important tradition for public health.

The Public Health Intelligence Group, New Zealand Ministry of Health, is lead sponsor for this first-ever international public health conference. Cosponsoring agencies include the School of Earth Sciences, Victoria University of Wellington, NZ; Eagle Technology, NZ; Critchlow Associates, NZ; IGU Commission on Health and Environment; and the Spatial Information Research Centre, University of Otago, NZ. The organizers are **Chris Skelly**, Senior Advisor (Health GeoInformatics), Public Health Intelligence, Public Health Directorate, NZ Ministry of Health and **Jan Rigby**, Institute of Geography, School of Earth Sciences, Victoria University of Wellington. Their International Steering Panel includes: **Chuck Croner** (CDC, USA), **Bill Davenhall** (ESRI, USA), **Danny Dorling** (University of Leeds, UK), **Mike Goodchild** (UCSB, USA), **Tony Gatrell** (Lancaster University, UK), **Isabelle Nuttall** (WHO, Geneva), and **Gerry Rushton** (University of Iowa, USA). The conference has drawn participants from many countries including New Zealand, Australia, Japan, Sri Lanka, India, USA, Canada, Brazil, UK, Norway, Sweden, Finland, Germany, Slovenia, and Kuwait.

I want to share with you the preliminary program as it has evolved to date. It has those timely and robust qualities that generate heightened anticipation. **December 3: Welcome and Introduction- Karen Poutasi, Director General, NZ Ministry of Health; Keynote: Public Health: GIS Challenges and Response, Chuck Croner, NCHS, Centers for Disease Control, USA; Keynote The potential use of GIS for cancer control and prevention activities, Gerry Rushton, University of Iowa; Spatial Information Research Colloquium (SIRC) Keynote: Geographical Weighted Regression, Stewart Fotheringham, University of Newcastle upon Tyne. Stream A: Techniques:** Models for individual level disease mapping, Allan Clark and Andrew Lawson, University of South Carolina, USA; Spatial diffusion of the HIV/AIDS epidemic in Japan based on the national HIV/AIDS surveillance, Nakaya Tomoki, Nakase Katsumi, Osaka Ken, Okabe Nobuhiko, Ritsumeikan University, Japan; Antibiotic Resistance: residential clustering and differentiation by deprivation, Clive Sabel, Paul Boyle, Peter Davey, Karolinska Institutet, Sweden; Geographical variation of non-communicable diseases and environmental risk factors: application of Bayesian modelling and GIS, Elena Moltchanova, M Rytönen, A Kousa, O Taskinen, J Tuomilehto, M Karvonen, National Public Health Institute, Finland. **Stream B: Mental Health:** Mapping Chronic and Complex Health Care: Dementia and



## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

17

Ethnicity, Hamish Robertson, Nick Nicholas, South East Health, Australia; Understanding the Spatial Variability of Borderline Disorders using GIS in a Mental Health Environment, Anton Turner, John Graham, Duane Wilkins, Waikato District Health Board, NZ; Adult community psychiatric service (ACPS) research and mapping project, Chris Ambrose, Daniel Williams, Crown Public Health, NZ; A Good Place to Talk: Mapping Mental Health Advocacy Services in London using a GIS, Ronan Foley, Hazel Platzer, University of Brighton, UK. [Stream C: SIRC Papers](#).

**December 4: SIRC Keynote: Cognitive Research in Geographic Information Science**, Dan Montello, University of California Santa Barbara; [Stream D: Community Infrastructure](#): GIS Applications for Creating Walkable and Bikable Communities: WBC Analyst, Chanam Lee, Phil Hurvitz, Anne Vernez Moudon, University of Washington, USA; Community resources: How equitable is access across a city?, Adrian Field Karen Witten, Massey University, NZ; [Stream E: Surveillance \(1\)](#). Interpreting spatial & temporal patterns in Campylobacter surveillance data, Charlotte Morgan, Flinders University, Adelaide; Using Geographical Information Systems to Identify the Source of a Waterborne Gastrointestinal Outbreak in Walkerton, Ontario, Canada, May-June, 2000, Rob Meyers, J Aramini, A Ellis, G Lim, J Stratton, F Pollari, S Majowicz, Health Canada. [Stream F: SIRC. SIRC Keynote](#): Pip Forer, University of Auckland; **Keynote: Data Access and Data Warehousing**, Mike Goodchild, University of California Santa Barbara.

[Stream G: Managing Infrastructure](#). Geographic Information Systems Infrastructure for Public Health and Surveillance; David Lewis, Health Canada; GIS Application in health data management system for disease surveillance and monitoring: understanding innovative approaches in data development, S Shanmuganandan, Madurai Kamaraj University; Development of the national database for primary care groups and trusts, Andrew Wagner, Deborah Baker, National Primary Care Research and Development Centre, UK; The use of Geographical Information Systems (GIS) in realising "Joined-Up" Geography in the National Health Service, Gary Higgs, Darren Smyth, Myles Gould, University of Glamorgan, UK. [Stream H: Health Inequalities \(1\)](#). Tools to support health policy development in South Australia, Sarah Tennant, John Glover, University of Adelaide, Australia; Inequalities in health and the geography of morbidity in Spain, Joan Costa Font, LSE, UK; South Yorkshire health inequalities atlas, Paul Fryers, Doncaster East Primary Care Trust, UK; Monitoring health inequalities related to socioeconomic position, Anthea Page, John Glover, University of Adelaide, Australia; Geo-socio-economic factors as determinants of health: an analysis of small-area mortality rates in Germany, Angela Queste, Rainer Fehr, Thomas Kistemann, Maria Blettner, Institute for Public Health and Hygiene, Germany. [Stream I: Accessibility \(1\)](#). An Analysis of Geographical Patterns in the Utilisation of Secondary Health Care Services, Mark Birkin, Graham Clark, Roger Dewhurst, Phil Gibson, University of Leeds, UK; Accessibility of after hours primary medical services in Auckland, Nick Jones, Jinfeng Zhao, Pip Forer, Auckland Regional Public Health Service, NZ; Variations in secondary care utilisation and geographic access: initial analysis of 1996 data, Adrian Slack, Jackie Cumming, Dave mare, Jason Timmins, Health Services Research Centre, NZ.

**December 5. Keynote: Building a GIS Centric Community Health Surveillance System**, Bill Davenhall, ESRI.

[Stream J: Accessibility \(2\)](#). MAPS: Mapping access to public health services, Dave Gilbert, Ken Patterson and Amy Welton, University of Washington, USA; Placing the Practice: GP Service Location Planning using GIS in Brighton & Hove, Ronan Foley, Natasha Darby, University of Brighton, UK; Incorporating capacity constraints and least cost path analysis into a geographical accessibility model of general practitioners, Lars Brabyn, University of Waikato, NZ; Changing geographies and the measurement of spatial access to healthcare, Pip Forer, Nick Jones, University of Auckland; [Stream K: Internet Tools](#). Accessing distributed geographically-referenced population health information via the Web, Alan Willmore, Tim Churches, James Murty, Kerry Taylor, New South Wales Dept of Health, Australia; XML-based self-mapping of ALS (Lou Gehrig's disease) patients for visualization and environmental analysis, Kathleen Baker, TH Rasmussen, I Zaslavsky, B Tolo, University of Michigan-Flint; Public Health Observations in England: regional nodes in an evolving system, Karen Tocque, North West Public Health Observatory, UK. [Stream L: Environmental Risk](#). Social deprivation and the public health risks of community drinking-water supplies in New Zealand, Simon Hales, Wendy Black, Chris Skelly, Clare Salmond, Phil Weinstein, University of Otago, NZ; Small-Area

## PUBLIC HEALTH GIS NEWS AND INFORMATION

November 2002 (No. 49)

18

Indices of Potential Environmental Health Risk: Construction and Application to Environmental Health Equity in England and Wales, Ben Wheeler, Yoav Ben-Shlomo, E Whitely, University of Bristol, UK; The geography of traffic accident risk-some policy consequences, Stig Jørgensen, Norwegian University of Science and Technology, Norway; GIS modelling and probabilistic assessment of pollution hazard in groundwater, case studies in India and Kuwait, Rao Divi, Kuwait University. Keynote: The medical geography of despair, inequity and hope, Danny Dorling, University of Leeds.

**Stream M: Surveillance (2).** Mapping of West Nile virus risk in the NorthEast United States using multi-temporal meteorological satellite data, Bryon Backenson, Dennis White, Millicent Eidson, Laura Kramer, Dale Morse, Compton Tucker, Monica Myers, Simon Hay, David Rogers, New York State Dept of Health; Two case studies on HIA and GIS in Slovak Republic and Slovenia, Gabriel Gulis, Branco Kontic, Jozef Stefan Institute, Slovenia; Spatial, temporal, and spatio-temporal epidemiology of foot-and-mouth disease in Cumbria and Devon, February to September 2001, JW Wilesmith, Mark Stevenson, CB King, RS Morris, nstitute of Veterinary, Animal and Biomedical Sciences, NZ. **Stream N: Intervention.** Mobile speed cameras and road traffic crash injuries: a controlled before and after study of small area effectiveness, Stephen Christie, Ronan Lyons, Frank Dunstan, Sarah Jones, Gwent Health Authority; Planning malaria control interventions in an endemic area of Sri Lanka using GIS, DM Gunawardena, OJT Briet, W van der Hoak, FP Amerasinghe, LP Muthuwatta, International Water Management Institute, Sri Lanka; Application of spatial analytical methods to estimate geographical risk of major transmissible diseases of cattle in Sub-Saharan Africa in the context of optimal targeting of intervention strategies, Archie Clements, Dirk Pfeiffer, Joachim Otte, Pius Chilonda, Vincent Martin, Royal Veterinary College, UK; Smoking cessation services; are they targeting high-risk groups?, Karen Tocque, North West Public Health Observatory, UK; **Stream O: SIRC. GeoHealth Forum: Where to from here?** Chris Skelly, Senior Advisor (Health GeoInformatics), Ministry of Health, Summing up and Panel Discussion.

My feeling is there is something of interest for everyone in this historical event about to take place in Wellington, NZ. I hope GeoHealth 2002 will encourage more government-sponsored public health GIS conference activity in the future. This conference [see latest program at <http://www.geohealth.org.nz>] offers timely opportunity to network across the world with others, expand upon our collective GIS and public health consciousness and, fittingly, provide some direction at its conclusion to Chris Skelly's forum that challenges 'Where to From Here'?



Recipient of the "2002 NCHS Director's Award for Equal Employment Opportunity and Civil Rights Program Activities"

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 at [cmc2@cdc.gov](mailto:cmc2@cdc.gov). This is the 49<sup>th</sup> edition with continuous reporting since 1994.

Our GIS home page contains current GIS events, archived GIS reports and other GIS links

<http://www.cdc.gov/nchs/gis.htm>