

PUBLIC HEALTH GIS NEWS AND INFORMATION

March 2002 (No. 45)

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



Selected Contents: Events Calendar (pp.1-2); (p.8); Public Health and GIS Literature (20); Website(s) of Interest (pp.20-21); Final



News from GIS Users (pp.2-8); GIS Outreach (pp.8-16); DHHS and Federal Update (pp.16-24); Thoughts (pp.21-24)

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

April 16, 2002. "Metadata Tutorial: Guidelines for DHHS Programs" by Fred Broome, U.S. Bureau of the Census and Federal Geographic Data Committee, from 2:00-3:30PM. This NCHS Cartography and GIS Guest Lecture Series program will be held at the NCHS Auditorium, RM1100, Hyattsville, MD; Envision is available to offsite CDC/ATSDR locations; Web access is available to all others at <http://video.cdc.gov/ramgen/envision/live.rm> (link becomes active approximately 30 minutes prior to the event and viewing requires RealPlayer installation). See abstract for presentation in this edition.

[Note: 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. This is the 101st presentation in this series. Contact: Editor, *Public Health GIS News and Information*]

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

☛ Meetings of the Society for Applied Anthropology and the Society for Medical Anthropology: "Environment and Health in the New Millennium," March 6-10 2002, Atlanta GA [See: <http://www.sfaa.net/am.html>]

☛ 2002 GITA Annual Conference 25: "Bringing IT Together: Charting the Course," March 17-20, 2002, Tampa FL [See: <http://www.gita.org>]

☛ The First International Conference on Remote

Sensing Law, The National Remote Sensing and Space Law Center, April 18-19, 2002, Oxford MS [See: <http://www.spacelaw.olemiss.edu>]

☛ Fifteenth Annual GIS for Transportation Symposium (GIS-T 2002): "Melting Down the Stovepipes," March 25-27, 2002, Atlanta GA [See: <http://www.gis-t.org>]

☛ 2002 ASPRS-ACSM (American Society for Photogrammetry and Remote Sensing-American Congress on Surveying and Mapping) Annual Conference and FIG (International Federation of Surveyors) XXII Congress, April 22-26, 2002, Washington D.C. [See: <http://www.asprs.org>]

☛ The Society for Public Health Education (SOPHE) 2002 Midyear Scientific Conference, May 2-4, 2002, Cincinnati, OH [See: <http://www.sophe.org>]

☛ Specialist Meeting on Spatial Data Analysis Software Tools, The Center for Spatially Integrated Social Science (CSISS), May 10-11, 2002, Santa Barbara CA [See: <http://www.csiss.org>]

☛ Hawaii International Conference on Statistics and Related Fields, June 5-9, 2002, Waikiki, Honolulu HI [See: <http://www.hcstatistics.org>]

☛ 2002 NGWA Conference on MTBE (Methyl Tertiary Butyl Ether): Assessment, Remediation, and Public Policy, June 6-7, 2002, Orange CA [See: <http://www.ngwa.org/education/mtbebro.html>]

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Indoor Air 2002: The 9th International Conference on Indoor Air Quality and Climate (official conference of the International Academy of Indoor Air Sciences), June 30-July 5, 2002, Monterey CA [See: <http://www.indoorair2002.org>]

☞ Twenty-Second Annual ESRI International User Conference, July 8-12, 2002, San Diego CA [See: <http://www.esri.com/events/uc>]

☞ 6th World Multiconference on Systemics, Cybernetics And Informatics, July 14-18, 2002, Orlando FL [See: <http://www.iiis.org/sci2002>]

☞ 2002 NCHS Data User's Conference, July 15-17, 2002, Washington, D.C. [See: <http://www.cdc.gov/nchs>]

☞ 6th International Meeting on Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases, July 23-27, 2002, Paris France [Contact: Altaf Lal, Division of Parasitic Diseases, National Center for Infectious Diseases, CDC, at alal@cdc.gov]

☞ Street Smart and Address Savvy Conference, August 11-13, 2002, Portland OR [See: <http://www.urisa.org/address.htm>]

☞ Joint Statistical Meetings of the American Statistical Association, "Statistics in an Era of Technological Change," August 11-15, 2002, New York City, NY [See: <http://www.amstat.org/meetings/jsm/2002>]

II. GIS News

(Please communicate directly with colleagues referenced below on any items; please 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 Painter**, U.S. Geological Survey (**Federal Geographic Data Committee Announces Funding Opportunities for National Spatial Data Infrastructure Cooperative Agreements Program**): The Federal Geographic Data Committee (FGDC) will

begin accepting proposals for the 2002 National Spatial Data Infrastructure Cooperative Agreements Program (CAP). The CAP program provides seed funds to the GIS community to build the National Spatial Data Infrastructure (NSDI) for the effective discovery, sharing, managing, and utilization of digital geographic data. The CAP will fund projects in four areas: (1) **Metadata Creation and Implementation Projects**: provides assistance to organizations in acquiring knowledge of metadata documentation and assistance for creating metadata for service over the Internet. Metadata is a basic first step in implementing the NSDI. (2) **Metadata Trainer Assistance Projects**: funds trainers to train organizations in metadata implementation. (3) **Clearinghouse Integration with OpenGIS Services**: funds projects to extend existing clearinghouse nodes with OpenGIS Consortium (OGC) compliant web mapping service capabilities and related standards-based services in a consistent way. (4) **Joint Canadian/US Spatial Data Infrastructure Project**: funds Canadian and U.S. organizations who are collaborating in order to share, create and maintain geospatial data over a common geography.

Approximately **\$385,000** is available for the FY 2002 CAP program. Collaborative and sustainable projects are encouraged as well as projects that conform to state or regional GIS infrastructure goals. Federal, state and local government, academic, regional, profit and non-profit organizations may apply. For more information on the CAP program application materials and instructions, and NSDI background information go to <http://www.fgdc.gov/funding/cap2002.html> or <http://www.usgs.gov/contracts/FGDC>. The open period for submission of proposals closes March 15, 2002. [About the FGDC: The Federal Geographic Data Committee (FGDC) is an interagency committee that promotes the coordinated use, sharing, and dissemination of geospatial data on a national and local basis. The FGDC is composed of representatives from federal cabinet level and independent federal agencies, and national non-federal organizations. Contact: David, FGDC CAP Coordinator, at 703.648.5513 or dpainter@fgdc.gov]

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2. From **Joey Zhou**, HUD: Office of Healthy Homes and Lead Hazard Control has given a grant to Duke University for a GIS related project **“GIS-based Predictive Risk Models for Directing Housing Intervention”** under FY 2001 Healthy Homes Research Program Notice of Funds Availability (SuperNOFA: FR-4630-N-01): Project Description: A GIS-based predictive modeling approach, built on an ongoing GIS modeling project on residential lead hazards funded by CDC, is proposed to characterize multiple home environmental health risks to children down to the individual house level. Targeted hazards are allergens and asthma triggers, lead, insect and rodent pests, mold and moisture problems, asbestos, radon, fire, and combustion products from heating and cooking appliances. Environmental sampling will be conducted in 300 homes in five North Carolina counties. The model will enable communities to allocate resources more cost-effectively into housing intervention programs across a range of risks. [Contact: Joey at Joey_Zhou@HUD.gov]

3. From **Art Getis**, San Diego State University (**Follow up to last edition *Public Health GIS News and Information* “On the Detection of Clusters”**): Point Pattern Analysis (by Jared Aldstadt, DongMei Chen, and Art Getis) is a statistical package in which the work is done on the Internet. The programs include **nearest neighbor, local statistics, Knox, and global autocorrelation statistics**. Many of the programs are designed to help in identifying statistically significant clusters of points and weighted points. The various routines are documented with an example in each case. Many of the examples come from the public health field. The site is located at <http://xerxes.sph.umich.edu:2000/cgi-bin/cgi-tcl-examples/generic/ppa/ppa.cgi>. [Contact: Art, Professor, Department of Geography and Co-Editor, *Journal of Geographical Systems*, at arthur.getis@sdsu.edu]

4. **Rachel Boba**, Police Foundation: This is to announce the release of a new report from the Crime Mapping Laboratory of the Police Foundation entitled, **“Introductory Guide to Crime Analysis and Mapping,”** which was produced through a project

funded by the Office of Community Policing Services (COPS). This document was created to convey the concepts covered in our Introductory Crime Analysis Mapping and Problem Solving Training Course and is meant to stand on its own (without the training course materials). It includes sections on 1) crime analysis definitions, 2) a history and introduction to crime mapping, 3) an introduction to problem solving, 4) data and geocoding, 5) basic spatial analytical techniques, and 6) crime analysis products and dissemination. To access the guide directly, go to http://www.usdoj.gov/cops/cp_resources/pubs_prod/s45.htm, and it is the second item from the top. Hopefully, this new product will assist those beginning and continuing to conduct crime analysis and mapping. We appreciate any comments and suggestions about our current as well as potential products. [Contact: Rachel, Director, Crime Mapping Laboratory at rboba@policefoundation.org]

5. From **Elaine Quesinberry**, Census Bureau: The American Community Survey is the U.S. Census Bureau's new approach for collecting accurate and timely socioeconomic and housing information about our nation and its states, cities, and communities. As part of the Census Bureau's plan to re-engineer the decennial census, the American Community Survey will replace the long form in 2010. It will begin full implementation nationwide in 2003, pending Congressional funding. It will give federal, state, and local government officials, as well as the profit and nonprofit sectors, data every year to evaluate programs and chart the future. Data from the American Community Survey test sites are available at <http://www.census.gov/acs/www>. Data from the Census 2000 Supplementary Survey, which uses the American Community Survey questionnaire and methodology, are now available for the nation, the states, the District of Columbia, and almost all cities and counties with populations of 250,000 or more. Data from the Census 2000 Supplementary Survey are available at <http://www.census.gov/c2ss/www>. The data for both the American Community Survey and the Census 2000 Supplementary Survey may also be accessed through the American FactFinder at

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<http://factfinder.census.gov>. [Contact: Elaine at elaine.v.quesinberry@census.gov]

6. From **Todd Bacastow**, Pennsylvania State University: A **Health Environment Alliance Symposium** will take place March 7-8, 2002, Harrisburg, PA. (See the agenda at <http://webgis1.essc.psu.edu/users/healliance/agenda.doc>). A Health-Environment Alliance has been created for the northeastern United States in order to better anticipate adverse health outcomes related to environmental variables. The Alliance's vision is to identify, inform, and manage the risk of environmentally-related adverse health outcomes by creating a user-centric, observation, data management, and prediction capability. The Alliance provides the infrastructure and knowledge-base in which geographically separated people collaborate to address key societal needs. The Alliance focuses on issues of immediate concern such as the West Nile Virus and Lyme Disease. Goals are to: (1) create a capability for sharing data and knowledge to enable decision makers to address a wide variety of health-environment issues as they emerge, ranging from infectious disease to food and water security to bioterrorism; and to (2) foster information exchange, education, and feedback at all levels. The purpose of the symposium is to (a) create an interdisciplinary foundation for collaboration and (b) develop an action plan addressing linked health-environment issues. Guiding the symposium are Eric Barron, Director, EMS Environment Institute, PSU and Nancy Maynard, Associate Director, NASA's Earth Science and Public Health Program. [Contact: Todd at bacastow@psu.edu]

B. Department of Health and Human Services

Agency for Healthcare Research and Quality

7. From **Virginia Cain**, National Institutes of Health: Last year, the Minority Health and Health Disparities Research and Education Act of 2000 requested that the Agency for Healthcare Research and Quality (AHRQ) prepare a National Healthcare Disparities Report. The Institute of Medicine's "**Committee for Guidance in Designing a National Health Care Disparities Report**" will provide guidance to the Agency for

Healthcare Research and Quality on the design of the national report on racial, ethnic, and geographic disparities in health care. It will address issues including how to measure access to health care and how to assess the impact of socio-economic status and other population factors. It will also look at issues such as data sources that might be used in the report. AHRQ has requested assistance in getting the word out that an opportunity for public input for the Congressionally mandated National Healthcare Disparities Report will be held at the Institute of Medicine on March 19-20, 2002. [Contact: Elaine K. Swift, Study Director, Institute of Medicine, at eswift@nas.edu]

**Agency for Toxic Substances
and Disease Registry**

8. "**Dioxin Exposure Investigation**"-ATSDR is sponsoring a follow-up exposure investigation in the Calcasieu and Lafayette parishes of Louisiana (see <http://www.atsdr.cdc.gov>). An earlier investigation found some area residents had higher-than-expected levels of chemicals called dioxins in their blood. The current investigation will determine the amount of dioxins and volatile organic compounds (VOCs) present in residents of the parishes. An exposure investigation is one approach ATSDR uses to develop a better characterization of past, current and possible future human exposures to hazardous substances in the environment. There are three main ways ATSDR gathers information in an exposure investigation: bio-medical testing (for example, blood or urine sampling); environmental testing (for contaminated soil, air or water); and exposure-dose reconstruction (using environmental data and computer models to estimate past exposures). The results of exposure investigations are used to make public health decisions and to recommend appropriate public health actions. [Contacts: ATSDR Community Involvement Specialist, La Freta Dalton or Epidemiologist, Deborah Millette (toll free at 1-888-422-8737) or ATSDR Regional Representative George Pettigrew (in Dallas) at (214) 665-8361]

9. The New Jersey Department of Health and Senior Services (NJDHSS) and ATSDR recently sought

public comments on its draft final report, *Case-Control Study of Childhood Cancers in Dover Township (Ocean County), New Jersey*. NJDHSS conducted a six-year investigation into elevated levels of certain childhood cancers in Dover Township. The draft report concludes that no single risk factor appears to be responsible for the overall elevated childhood cancer incidence in the township. However, it does identify some associations between prenatal exposure to specific sources and increased rates of leukemia in female children. The complete draft report is available online at <http://www.state.nj.us/health/coh/hhazweb>. [Source: January 2002 ASTHO *Environmental Health News* at www.astho.org]

Centers for Disease Control and Prevention

10. From **Meena Khare**, NCHS: Public-use data from the **1998 National Immunization Survey** (NIS) are now available on the Internet. The NIS is a list-assisted random-digit-dialing telephone survey that began data collection in April 1994 to monitor childhood immunization. The target population for the NIS is children between the ages of 19 and 35 months living in the United States at the time of the interview. Data from the NIS are used to produce timely estimates of vaccination coverage rates for each of six recommended vaccines for the nation and for each of 78 Immunization Action Plan (IAP) areas, consisting of the 50 states, the District of Columbia, and 27 large urban areas. [See: <http://www.cdc.gov/nis>]

11. From **Maisha Kambon**, NCEH: **Children's Environmental Health Information Resources-Broadcast Rescheduled**. The Association of State and Territorial Health Officials (ASTHO) is co-sponsoring the Public Health Training Network's satellite broadcast on "Children's Environmental Health Information Resources." The event has been rescheduled for Thursday, March 21, 2002, from 1:00-3:00PM EST. The broadcast will demonstrate how public health professionals can locate and evaluate electronic information resources on important children's environmental health issues, such as pesticide exposure, environmental triggers of asthma, and lead poisoning prevention funding resources. [For

more information about the broadcast and to register please go to www.phppo.cdc.gov/phtn/child-env/index.asp]

Health Resources and Services Administration

12. **Secretary's Initiative on Rural Communities**: The Department of Health and Human Services wants to know how each HHS program can be strengthened to better serve rural America (see <http://ruralhealth.hrsa.gov/initiative.htm>). We need to know the barriers that rural communities, families and individuals encounter when they work with HHS programs. We also need your ideas about improving access to services, strengthening rural families, strengthening rural communities and supporting their economic development, partnering with local, State and Tribal governments, and supporting rural decision-making. Your thoughts and ideas will help us prepare a report to Secretary Thompson, outlining options for better serving rural America. [Send comments by email at rural.comments@hhs.gov]

National Institutes of Health

13. From National Cancer Institute (**SEER*Stat 4.1**): SEER*Stat is a statistical system for the analysis of SEER and other cancer databases [See: <http://seer.cancer.gov/News>]. It provides cancer investigators with an easy to use Microsoft Windows (95, 98, NT, 2000, etc.) desktop package for viewing individual cancer records, and the production of the statistics listed below which are useful in studying the impact of cancer on a population. (A) Frequency, Rate, and Trend Statistics: Frequencies Row and column percentages; Crude (non-adjusted) rates with standard errors and confidence intervals; Age-adjusted rates with standard errors and confidence intervals; Trends over time as percent changes, from frequencies, crude rates, or age-adjusted rates; Trends over time as estimated annual percent changes, from frequencies, crude rates, or age-adjusted rates, with confidence intervals; Comparison of estimated annual percent changes with zero; Comparison of two estimated annual percent changes with one another, and (B) Survival Statistics: Observed survival; Net survival (absence of other causes of death), Relative survival

and Cause-specific survival; Crude probability of death (presence of other causes of death), Using expected survival and Using cause of death; Option to adjust for heterogeneity in withdrawal when using expected survival; Comparison of two survival curves (Z-statistic); and Conditional survival (special intervals).

Substance Abuse and

Mental Health Services Administration

14. SAMHSA's Office of Applied Studies (OAS) provides the latest national data on (1) alcohol, tobacco, marijuana and other drug abuse, (2) drug related emergency department episodes and medical examiner cases, and (3) the nation's substance abuse treatment system. [See at: <http://www.drugabusestatistics.samhsa.gov>]

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

15. 2002 Academic Partnership Meeting "**Making Prevention Work for Your Community,**" March 6-8, 2002, Atlanta GA: The Annual Partnering Meeting (see site <http://www.phppo.cdc.gov/owpp/partneringmeeting>), begun in 1994, is sponsored by CDC/ATSDR and Association of Schools of Public Health (ASPH), Association of Teachers of Preventive Medicine (ATPM), Minority Health Professions Foundation (MHPF), American Association of Medical Colleges (AAMC), and Hispanic-Serving Health Professions Schools (HSHPS). It promotes an understanding in academic health institutions of CDC's role in public health and preventive care and of CDC's research priorities and potential for extramural research funding. Additionally, it provides a venue for participants to share partnering experiences, highlight model collaborations, exchange ideas for research and funding opportunities, learn about the cooperative agreement process, and the goal of developing a skilled and educated public health workforce responsive to the diverse American population.

There will be an Interactive Hall where meeting participants can network with CDC scientists, technical advisors, and administrators. The goal of the Interactive Hall is to promote discussions of CIO

research priorities, the strengths and assets of our partnering institutions, and to facilitate collaborations between our partners and CDC. [Contacts: Maureen Lichtveld at (770) 488-2480 or Ruth Harris at (770) 488-2522]

16. **Superfund Minority Institutions Program: Hazardous Substance Research.** Synopsis of Program: The U.S. Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Center for Environmental Research (NCER), is seeking applications for the Superfund Minority Institutions Program that will provide extramural funding to minority institutions via grants to conduct research on Superfund related topics (see <http://es.epa.gov/ncer/rfa>). Appropriate projects include research on risk assessment and risk management issues associated with contaminated sites as well as related subjects such as community assessment and involvement, susceptible populations and tribal-specific topics. Minority institutions, including Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and Native American Tribal Colleges (TC) in the U.S. are eligible under all existing authorizations. [Contact: Nora Savage at voice (202) 564-8228 or savage.nora@epa.gov]

17. This is to announce the 2002 Summer Public Health Research Institute and Videoconference on Minority Health, June 17-21, 2001. Last year more than 140 downlink sites participated in the conference. [at www.minority.unc.edu/institute/2002/agenda.htm]

D. Other Related Agency or Business GIS News

18. From **Dunrie Greiling**, TerraSeer, Inc.: TerraSeer, Inc. and SpaceStat™ have joined forces. TerraSeer is a leader in spatial pattern recognition software, with applications in health and environmental sciences (see www.terraSeer.com). SpaceStat is the international leader in spatial econometric analysis software (feedback on SpaceStat can be found at <http://www.terraSeer.com/approach/comments.html>). The incorporation of SpaceStat into TerraSeer's product suite will add spatial modeling and predictive capabilities for business, marketing, and demographic

applications. A new release of SpaceStat is scheduled for late 2002. Luc Anselin, the originator of SpaceStat, will become TerraSeer's Vice-President for Analytical Services. TerraSeer's Chief Scientist is Geoffrey Jacquez. [Contact: Dunrie at dunrie@terraseer.com]

19. From **ESRI, Inc.**, Redlands CA: **ESRI Web-based Virtual Campus Courses for Health and Human Services**. We are proud to offer two, on-line courses for Health and Human Services: (1) Mapping for Health Care Professionals Using ArcView GIS, by Zvia Segal Naphtali and (2) The Geography of Health Care Planning and Marketing, by Greg Pugh Visit the campus at <http://campus.esri.com> for more details and instructions on how to enroll. You can view complete information in the on-line catalog under GIS Applications Courses.

20. From **Space Imaging**, Denver CO: Space Imaging is now offering custom-area, **5-meter resolution** satellite imagery of the continental United States from the Indian Remote Sensing (IRS) satellites through Space Imaging's new Carterra Online™. Customers can order the 5-meter, cloud-free, panchromatic, orthorectified imagery in three easy steps and have the order quickly filled for an introductory price \$1.50 per sq. km (see <http://www.spaceimaging.com/newsroom/releases/2002/5meter.htm>). The custom-area 5-meter product is ideal for regional planning, emergency management, homeland security, and utility corridor management. The imagery is orthorectified with a horizontal accuracy of up to 25-meters and 1:50,000 National Map Accuracy Standard (NMAAS).

Additionally, customers now have a new tool to visualize the earth in 3-D. The primary advantage of stereo imagery is the ability to extract cultural and geographic features in three dimensions such as buildings, roads and elevation contours. Stereo imagery is especially important for global markets where accurate elevation data is not readily available. Many commercial markets will benefit from stereo imagery including mapping, telecommunications, exploration and mining, transportation, environmental, urban planning and forestry. For example, airport officials can use stereo imagery for navigation and

simulation; the telecommunications industry can develop 3-D line-of-sight models to identify potential locations for wireless towers; the exploration and mining industries can visualize and measure the geographical features of a site; urban planners can extract GIS vector layers to update and map geographic information; and forestry managers can determine marketable timber and even calculate the amount of timber lost due to fire, natural disasters or illegal harvesting.

21. From **Christine Clarke**, USDA: USDA has signed a sweeping purchase agreement for a department-wide license for ESRI software. The recent 5 year Blanket Purchase Agreement will provide a complete enterprise suit of ESRI GIS software to all USDA Agencies--2600 field offices will have access to ArcView products. [Contact: Chris at Christine.Clarke@usda.gov]

22. From **Editor**: The University Consortium for Geographic Information Science (UCGIS) held a Congressional Breakfast and Briefing on February 7, 2002, which focused on the **Application of GIS and GI Science to Homeland Security**. Susan Cutter, Hazards Research Lab, University of South Carolina presided and Senator Michael Enzi, Wyoming, provided introductory remarks. Speakers included Sean Ahearn, Hunter College-City University of New York ("Local Contributions to the Response"); David Frost, Georgia Institute of Technology ("Digital Data Collection for Damage Assessment"); Deborah Thomas, University of Colorado at Denver ("Evaluation of Use of Geotechnologies in Rescue and Relief Efforts"); Jerome Dobson, University of Kansas ("Using GIS for Protection of Threat and People at Risk"); and Douglas Richardson, Association of American Geographers ("Developing a Research Agenda for Homeland Security Needs").

In addition there were agency briefings on the USGS National Map, NASA's Homeland Security initiative, NIMA's support for Homeland Security, NSF's Opportunities for Funding, the Census Bureau's American Community Survey for Reengineering the 2010 Census, and NSA's Advanced Research and

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Development Activities. From my perspective, these meetings provide an important service to government leaders. The topics are timely and the presentations are well prepared and informative. It also provides excellent exposure for the UCGIS program whose Director, Susan McDonald Jampoler, deserves our collective credit for making these congressional interfaces (see <http://www.ucgis.org>) a success.

I'll share one quick anecdotal story following the briefing. I met a Congressional Fellow working for Senator Mary Landrieu, Louisiana, by the name Mike Chaddock. He's also a Veterinarian and quickly understood the value of GIS, especially as it might apply to Senator Landrieu's rural constituents. Like anyone else in a national emergency, farmers want to know about the location of veterinarian facilities, emergency evacuation routes, protected facilities, etc., for their animals and livestock. Mike made it clear they don't leave without them. He immediately envisioned many of these data layers in a GIS and the provision of maps to farmers. Mike said it has not been done and perhaps Mary might be willing to support a small pilot study in one of her parishes. [Contact: Mike at Mike_Chaddock@Landrieu.senate.gov]

III. GIS Outreach

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

☛ From **Paul Martin**, Mecklenburg County Health and Human Services Core Service Area: I am interested in knowing if a group has formed to pursue **standards** in the area of human services data, i.e. public health data and health and human services data. If not, are there any resources that you can suggest? Among the things that I am interested in is finding a discussion group dedicated to clarifying the impact of HIPAA on geographic data. [Contact: Paul Martin, Office of Planning and Evaluation, at martiph@co.mecklenburg.nc.us]

☛ From **Allison Bingham**, Program for Appropriate Technology in Health (PATH): I am looking for anyone who is currently working in Kenya on GIS related activities or knows of any groups who have mapping data. Specifically I am looking for **boundary**

data in the Western Kenya region (BUSIA District). We are developing surveillance capacity for monitoring a pilot Cervical Cancer prevention screening initiative and if possible, would love to use GIS (ArcView) as part of this effort. Any leads or contacts would be appreciated. [Contact: Allison at abingha@path.org]

☛ From **Jack Lockwood**, Columbus GA: Does anyone know of any grants that are available for the development of GIS infrastructure on a local county or district level? [Contact: Jack, Chronic Disease Prevention Program, West Central Health District, at jlockwood@gdph.state.ga.us]

IV. Public Health GIS Presentations and Literature

NCHS Cartography and GIS Guest Lecture Series April 16, 2002. "Metadata Tutorial: Guidelines for HHS Programs" by Fred Broome, U.S. Bureau of the Census and Federal Geographic Data Committee, from 2:00-3:30PM, NCHS Auditorium. **Abstract.** This is a timely tutorial for all agencies and data programs that produce any files with geospatial information. Specifically, OMB requires the following of HHS: "An assessment of whether current or planned acquisitions, uses or dissemination of geospatial data are based on standards under Federal Geographic Data Committee (FGDC) development. Beginning in FY 2003, agencies will have to meet the FGDC standards (or fund remediation to standardize systems). Also, in FY 2003, agencies will ensure that geospatial data as defined in Executive Order 12906 [April 1994] will be collected, produced and disseminated in accord with FGDC standards, before any funds are obligated for activities related to this data. These requirements cover any geospatial data collected either directly or indirectly (e.g., through grants, partnerships, or contracts with other entities). OMB approval of project funding will be contingent on compliance of geospatial activities." [Note: Even if you produce data with political boundaries or nominal spatial codes, such as a state or state name, respectively, it needs to conform to FGDC metadata standards. Anything that can be directly linked to a GIS requires a geospatial metadata record.

This tutorial welcomes audience interaction and questions. Every federal agency needs to be onboard with regard to this OMB requirement]

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 March 2002 issue of CDC's journal, *Emerging Infectious Diseases* (EID), is currently available at the CDC web site <http://www.cdc.gov/ncidod/EID/index.htm>. This issue contains articles with potential relationships to GIS applications including Flaviviruses Protective Against Fatal West Nile Encephalitis; Livestock Farming and Shiga Toxin-Producing *E. coli*; *Eastern Equine Encephalomyelitis Virus* in a California Horse; Predicting the Risk of Lyme Disease in the North Central US; and Malaria Epidemics in the Highlands of Western Kenya.

Morbidity and Mortality Weekly Report

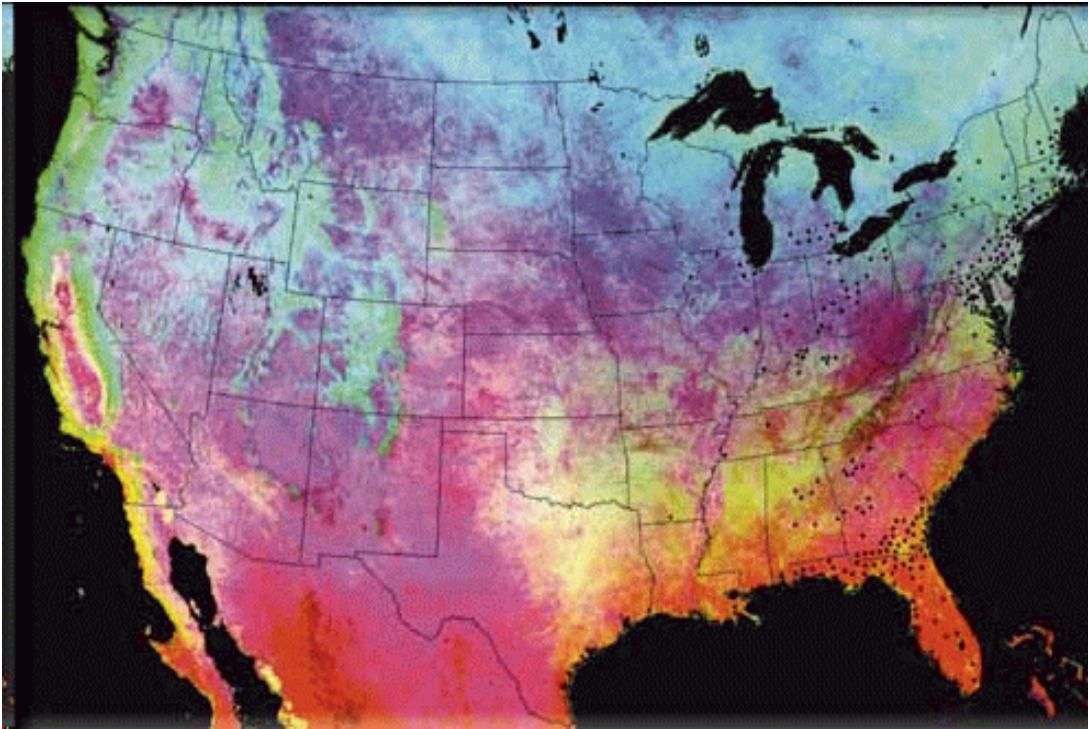
Selected articles from CDC's ***Morbidity and Mortality Weekly Report (MMWR)***: [Readers may subscribe to MMWR and other CDC reports, without cost, at <http://www.cdc.gov/subscribe.html> and access the MMWR online at <http://www.cdc.gov/mmwr>]: Vol. **51**, No.7-Ex: Laboratory-Acquired Meningococcal

Disease-United States, 2000; Populations Receiving Optimally Fluoridated Public Drinking Water-United States, 2000; Vol. **51**, No. **6**- Measles-United States, 2000; State-Specific Mortality from Sudden Cardiac Death- United States, 1999; Notice to Readers: Status of U.S. Department of Defense Preliminary Evaluation of the Association of Anthrax Vaccination and Congenital Anomalies; Vol. **51**, No. **5**- Progress Toward Elimination of Perinatal HIV Infection-Michigan, 1993-2000; Tuberculosis Morbidity Among U.S.-Born and Foreign-Born Populations, United States, 2000; Vol. **51**, Number **RR-2**- *General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP)*; Vol. **51**, No. **4**- Pertussis-United States, 1997-2000; Hypothermia-Related Deaths-Utah, 2000, and United States, 1979-1998; Update: Influenza Activity-United States, 2001-02 Season; Notice to Readers: Fifth Annual Conference on Vaccine Research; Vol. **51**, Number **RR-1** *Community Interventions to Promote Healthy Social Environments: Early Childhood Development and Family Housing: A Report on Recommendations of the Task Force on Community Preventive Services* Vol. **51**, No. **3**- Recent Trends in Mortality Rates for Four Major Cancers, by Sex and Race/Ethnicity-United States, 1990-1998; Immunization Registry Use and Progress-United States, 2001 Vol. **51**, No. **2**- Lyme Disease-United States, 2000; Notice to Readers: Recommended Childhood Immunization Schedule-United States, 2002.

Other Literature: Special Reports, Books

PE&RS February 2002: Volume 68, Number 2, Photogrammetric Engineering & Remote Sensing , Journal of the American Society for Photogrammetry and Remote Sensing

Highlight Article: Predicting the Distribution of West Nile Fever in North America using Satellite Sensor Data, by David J. Rogers, Monica F. Myers, Compton J. Tucker, Perry F. Smith, Dennis J. White, P. Bryon Backenson, Millicent Eidson, Laura D. Kramer, Bernhard Bakker and Simon I. Hay [See: http://www.asprs.org/asprs/publications/pe&rs/2002journal/February/february_frame.html] Temporal Fourier-processed NOAA AVHRR 1km Land Surface Temperature (LST) imagery (1997-2000) produced by the International Research Partnership for Infectious Diseases (INTREPID) to help monitor and predict the spread of West Nile Virus (WNV) in the United States. Temporal Fourier analysis of the time-series of 14-day maximum



value composited LST images captures habitat seasonality in terms of the mean value and the amplitudes and phases of the annual, bi-annual, and tri-annual cycles in these data. In this figure, the mean, annual amplitude and annual phase are in the red, blue and green channels respectively. Brighter colors mean higher values. Black dots superimposed on this image are the locations (county

geo-centers) where birds infected with WNV were reported between January and October 2001.

Selected Contents

Introduction: From Remote Sensing to Relevant Sensing in Human Health, Guest Editors, *Simon I. Hay, Monica F. Myers, Nancy Maynard, and David J. Rogers*;

Predicting the Distribution of West Nile Fever in North America using Satellite Sensor Data, *David J. Rogers, Monica F. Myers, Compton J. Tucker, Perry F. Smith, Dennis J. White, P. Bryon Backenson, Millicent Eidson, Laura D. Kramer, Bernhard Bakker and Simon I. Hay*

Mapping Potential Risk of Rift Valley Fever Outbreaks in African Savannas Using Vegetation Index Time Series Data, *Assaf Anyamba, Kenneth J. Linthicum, Robert Mahoney, Compton J. Tucker, and Patrick W. Kelley*;

Climatic and Ecological Context of the 1994-1996 Ebola Outbreaks, *Compton J. Tucker, James M. Wilson, Robert Mahoney, Assaf Anyamba, Kenneth Linthicum, and Monica F. Myers*;

Application of Remote Sensing to Enhance the Control of Wildlife-Associated *Mycobacterium bovis* Infection, *J.S. McKenzie, R.S. Morris, D.U. Pfeiffer, and J.R. Dymond*;

Updating Historical Maps of Malaria Transmission Duration in East Africa Using Remote Sensing, *J.A. Omumbo, S.I. Hay, S.J. Goetz, R.W. Snow, and D.J. Rogers*;

The Use of Remote Sensing for Predictive Modeling of Schistosomiasis in China, *Edmund Seto, Bing Xu, Song Liang, Peng Gong, Weiping Wu, George Davis, Dongchuan Qiu, Xueguang Gu, and Robert Spear*;

Using NOAA-AVHRR Data to Model Human Helminth Distributions on Planning Disease Control in Cameroon, West Africa, *Simon Brooker, Simon I. Hay, Louis-Albert Tchuem Tchuente, and Raoult Ratard*.

Geographical epidemiology of prostate cancer in Great Britain, Jarup L, Best N, Toledano MD, Wakefield J, Elliott P., *Int J Cancer* 2002; 97: 695-699. **Abstract:** Prostate cancer incidence has increased

during recent years, possibly linked to environmental exposures. Exposure to environmental carcinogens is unlikely to be evenly distributed geographically, which may give rise to variations in disease occurrence that

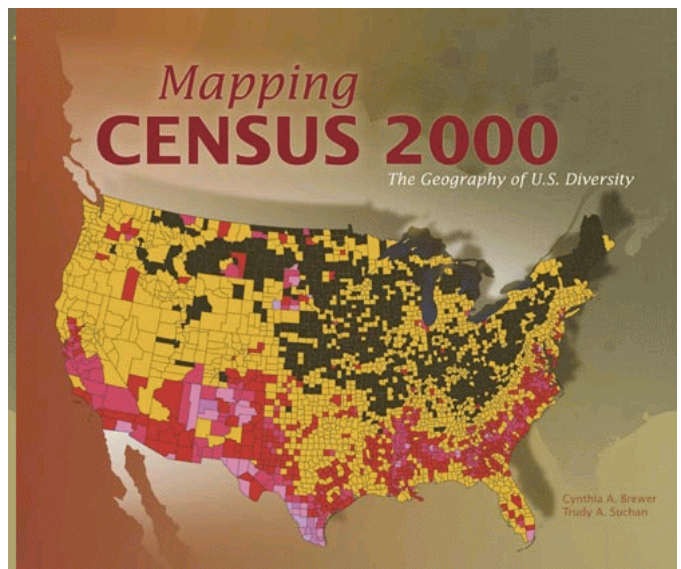
is detectable in a spatial analysis. The aim of our study was to examine the spatial variation of prostate cancer in Great Britain at ages 45-64 years. Spatial variation was examined across electoral wards from 1975-1991. Poisson regression was used to examine regional, urbanisation and socioeconomic effects, while Bayesian mapping techniques were used to assess spatial variability. There was an indication of geographical differences in prostate cancer risk at a regional level, ranging from 0.83 (95% CI: 0.78-0.87) to 1.2 (95% CI: 1.1-1.3) across regions. There was significant heterogeneity in the risk across wards, although the range of relative risks was narrow. More detailed spatial analyses within 4 regions did not indicate any clear evidence of localised geographical clustering for prostate cancer. The absence of any marked geographical variability at a small-area scale argues against a geographically varying environmental factor operating strongly in the aetiology of prostate cancer.

A GIS-based framework for hazardous materials transport risk assessment, Verter V, Kara By, *Risk Analysis*, 2001; 21:(6)1109-1120. **Abstract:** This

article presents a methodology for assessment of the hazardous materials transport risk in a multicommodity, multiple origin-destination setting. The proposed risk assessment methodology was integrated with a Geographical Information System (GIS), which made large-scale implementation possible. A GIS-based model of the truck shipments of dangerous goods via the highway network of Quebec and Ontario was developed. Based on the origin and destination of each shipment, the risk associated with the routes that minimize (1) the transport distance, (2) the population exposure, (3) the expected number of people to be evacuated in case of an incident, and (4) the probability of an incident during transportation was evaluated. Using these assessments, a government agency can estimate the impact of alternative policies that could alter the carriers' route choices. A related issue is the spatial distribution of transport risk, because an unfair distribution is likely to cause public concern. Thus, an analysis of transport risk equity in the provinces of Quebec and Ontario is also provided.

Keywords: hazardous materials, transportation, risk, equity, Geographic Information Systems, large-scale implementation.

Mapping Census 2000: The Geography of U.S. Diversity, by Cynthia Brewer and Trudy Suchan. Using the latest geographic information technology (GIS) from ESRI, cartographers Cynthia A. Brewer and Trudy A. Suchan have taken Census 2000 data and assembled an atlas of maps that illustrates the new American diversity (see <http://www.esri.com/library/esripress/mapcen.html>). Several aspects make Census 2000 an especially fascinating data resource. This most recent census included new and expanded categories of racial and ethnic identity by which residents could accurately identify themselves. In addition, 2000 was the first time that residents were



allowed to identify themselves as belonging to multiple ethnic categories, resulting in a new and more accurate portrait of the population. And residents of Hispanic origin, one of the most important and fastest-growing demographic groups in the country, could identify themselves in new ways. [Cynthia is associate professor of geography at The Pennsylvania State University and Trudy is a geographer in the Population Division of the U.S. Bureau of the Census]

*Special Report***“Remote Sensing for Human Welfare: Transition from Basic Science to Applications”**

[Planning meeting to discuss a potential new study, March 4, 2002, National Academy of Sciences]

SCOPE: Remotely sensed data provide spatial information crucial for addressing some of the most challenging environmental issues of major relevance to society's health and well being. Such data are routinely used to address some of these challenges, most notably weather forecasting, based on decades of scientific development and operational experience. For other challenges the potential for applying remotely sensed data clearly exists in the long term but scientific, institutional, and logistical obstacles must first be addressed. This study will identify key environmental challenges in which remotely sensed data potentially play a key role, including but not limited to public health applications to identify potential outbreaks of infectious disease in response to environmental influences; detection and response to natural disasters such as floods, droughts, and fires; humanitarian services; and protection of genetic resources in areas threatened by declining biodiversity. The committee will consider the current status and future potential for remotely sensed data to contribute to these challenges and strategies for moving towards this goal. Specifically, the committee will identify 1) those environmental challenges of high relevance to society which potentially benefit from scientific and institutional investments in application of remote sensing and 2) strategies to address current impediments in linking scientific results with operational use of remotely sensed data, including data accessibility and acquisition.

DETAILED DESCRIPTION: Policy context: Spatial information underlies the ability of society to respond to many of the environmental challenges of major, direct, and immediate relevance for human health and well-being. Among these challenges, for example, are weather forecasting; identifying potential outbreaks of infectious diseases in response to environmental influences; responding to natural disasters such as fires, floods, and droughts; and protecting genetic resources affected by declining

biodiversity. Remotely sensed data offer a suite of information for responding to these challenges. For some challenges such as weather forecasting, satellite data are routinely used for operational forecasting resulting from several decades of basic research and operational experience. Other applications of remotely sensed data to human welfare, such as identifying outbreaks of infectious diseases and natural disasters, have more recently been explored. In some cases fundamental scientific questions remain before further advancements towards operational applications can be achieved.

One of the stated goals of the recently released strategic plans for NASA's Earth Science Enterprise is to “expand and accelerate the realization of economic and societal benefits from Earth science, information, and technology” (Asrar et al., 2000). With the successful launches of the Earth Observing System Terra platform in December 1999, the Landsat 7 mission in April 1999, commercial sensors such as IKONOS, and other current and future missions, the potential for applying satellite data to environmental concerns of high societal relevance has never been greater. Global data at high spatial and temporal resolution with improved radiometric quality are now available and systems for acquiring data are in place.

A recently-released NRC study highlighted the most important environmental challenges of the next generation (NRC, 2000), many of which require spatial information about environmental variables, human activities, and landscapes. The study proposed here will identify those key challenges in which remotely sensed data potentially play a key role. Based on an understanding of the current status of remote sensing data to address the challenges, the committee will consider the scientific, technical, and institutional issues required for applying remotely sensed data in an operational context. The outcome of the study will be a set of recommendations establishing priorities for moving toward application of remote sensing to key environmental challenges, strategies to link research with applications, and identification of those environmental challenges which are most likely to benefit in the longer term from investment aimed at application of remotely sensed data.

Technical Context: There are several precedents for the application of remote sensing data to key societal needs. In addition to weather forecasting, a few examples include the AID Famine Early Warning System (FEWS) to monitor crop yield in sub-Saharan Africa; US Forest Service (and other countries) application of remote sensing data to detect and respond to fires; and country statistics of forest cover derived by the UN Food and Agriculture Organization partially from remote sensing information. Several international initiatives are underway, such as the Global Forest Watch and the Global Observations of Forest Cover, aimed at moving towards operational monitoring of forest cover from remote sensing. In addition, the ability for remote sensing to identify public health risks from environmental influences on disease vectors has been demonstrated in a number of studies (e.g. Linthicum et al., 1999; Lobitz et al. 2000).

An increasing array of remote sensing tools, both public and commercial, open possibilities for applying remote sensing to many societal needs ranging from natural disaster response to protection of genetic resources. To move towards such applications, however, requires firm scientific basis and raises a host of institutional and logistical issues. Some of the institutional issues are being addressed through the Space Studies Board Workshops on Space Applications and Commercialization.

In this study, the committee will carry out a strategic analysis to 1) prioritize the environmental challenges to which remote sensing data can most usefully contribute in the longer-term and 2) identify the scientific and institutional impediments that need to be addressed for remote sensing data to successfully contribute, including issues of data accessibility and acquisition. The committee will identify a set of key issues highly relevant to society in which remotely sensed data potentially play a key role. For each of these issues, a number of questions will be addressed:

*How can remote sensing data address needs for meeting the challenge?

*To what extent is fundamental research required in order that remotely sensed data be applied to the challenge?

*To what extent are impediments institutional in nature?

*What are the needs for communication between the remote sensing and user communities to address the challenge?

*What are the priorities, in terms of both research and data availability, for applying remote sensing data to address the challenge?

Based on examination of these questions, the committee will consider strategies and priorities to link research with application of remote sensing data to environmental challenges of high societal relevance. Impediments to moving towards these applications and recommendations for addressing them will be considered.

PLAN OF ACTION: The National Research Council will convene a committee drawing on a wide range of expertise. Expertise will include operational application of remote sensing as well as scientific background in a number of the environmental challenges that will be considered in the study (public health, biodiversity, natural disasters, etc.). Particular attention will be paid to establishing a balanced committee with expertise in the environmental issues, remote sensing, and applications.

After identifying the key environmental challenges, the committee will hold a number of small workshops to examine each challenge, the contributions of remote sensing data, and strategies for linking the scientific understanding with application in an operational mode. Individuals with a broad range of expertise ranging from the scientific requirements to the remote sensing contributions will be invited to the workshops.

The committee's work will culminate in a report including priorities for the environmental challenges of high societal relevance which potentially benefit in the long-term from remote sensing application. The report will also include recommendations for addressing the scientific and institutional impediments to these applications.

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-National Research Council, 2000, Grand Challenges in Environmental Sciences, National Academy Press. Washington, D.C.

[Editor: The purpose of the meeting is to refine the proposal and to discuss sponsorship issues. **I would welcome any input Public Health GIS Users wish to offer and will forward your comments to the review committee**]

Special Report

Pew Commission Recommendations: Comments

Barbara Haley, HUD

This responds to your request (e.g., Jonathan Sperling, HUD, who is a member of CDC's Environmental Health Tracking Network (EHTN) task group- see Final Thoughts, this edition on the EHTN) for input regarding a contribution by HUD toward the implementation of Pew Commission recommendations to create a Nationwide Health Tracking System. Some health problems, such as childhood lead poisoning and asthma, have origins in both the environment and deteriorated housing. HUD, therefore, brings a unique expertise to discussions on how to create and maintain such a system. This expertise rests on both technical knowledge and an overview of the evolution of cities and their respective housing stocks.

Lead poisoning is the most common environmentally induced disease among American children, and it is completely preventable. Today nearly a million children (983,000) in the U.S. younger than 5 are believed to suffer from low-level lead poisoning, according to the federal Centers for Disease Control and Prevention (Mielke and Reagan, 1996). Low-level lead poisoning can cause permanent learning disabilities, hyperactivity, poor motor

coordination, and other developmental deficits. Indeed, reduced IQ, hearing loss and diminished stature are associated with lead levels considerably lower than the 10 micrograms of lead per tenth-of-a-liter of blood now deemed "acceptable" by the U.S. government (Institute of Medicine, 1996).

There are two major sources of lead in the environment, both of them human in origin. The first is leaded gasoline, which was outlawed in the U.S. in 1978 but which left a residue of about 5.9 million metric tons (13 billion pounds) of lead in the environment in the form of a fine, toxic dust (Nriagu and Pacyna, 1998) Much of that powdery lead is still moving around in soil and house dust. The second major source of lead dust is lead in paint. Lead, the soft, gray metal makes an excellent white pigment, and paint made with white lead pigment provides a high-quality, durable protective coating. Eventually, however, even lead-based paint deteriorates. It begins to flake, peel and disintegrate into a fine, powdery dust, which is toxic. Lead in paint was restricted on a voluntary basis by the paint industry in 1955, but voluntary compliance proved ineffective so, in 1971, Congress outlawed leaded paint for interior uses. Between 4 and 5 million metric tones (approximately 10 billion pounds) of lead were used in paint in the U.S. between 1889 and 1979 and much of it remains where it was originally put, slowly deteriorating into a toxic dust.

An estimated 42 million families live in homes containing an average of 140 pounds of lead in paint. If it has not been covered, this paint is a constant danger to toddlers who often pick up the dust on their hands, then transfer it into their mouths. Insurance companies and mortgage bankers are key players for creating a demand for lead-safe housing, but their requirements are unclear at this time. We may presume, though, that their requirements of prospective insurers who have lead-based paint anywhere in their buildings awaits proof that a relevant standard of due care will produce a profit. People who disturb lead-based paint during home repairs and renovations should be alerted to avoid the dangers of lead dust created by improper work practices.

In the U.S. today, more than 40% of all poor people are children (Montgomery et al, 1996). The General Accounting Office [GAO] found that 'few Medicaid children are screened for blood-lead levels,' even though the problem of lead poisoning is concentrated among low-income children on Medicaid. The GAO report found that states varied considerably in their compliance with this federal law. Washington State tested fewer than 1% of eligible children; New Jersey tested 40%. Alabama performed best, testing the highest proportion but still fewer than half (46%) of all eligible children.

Medicaid will NOT pay to test water, paint or house dust to find the source of lead contamination. This situation is further complicated by the fact that the typical family that brings a lead-poisoned child to clinics lives in poverty. These clients usually face such critical survival issues that immediate problems, such as obtaining adequate food and shelter, must be solved prior to treating the poisoned child. Lack of affordable alternative housing all too often results in the child returning to a hazardous environment (Snyder-Vogel, 1998).

Cost is always an issue in local enforcement of health or housing codes (Schirmer, 1998), regardless of their technical merit. At the Federal level, the Residential Lead-Based Paint Hazard Reduction Act of 1992, which is Title X of the Housing and Community Development Act of 1992 (Public Law 102-550), mandates coordinated action by several Federal agencies, including U.S. Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), the Department of Labor (DOL), the Department of Health and Human Services (HHS) (See <http://www.cdc.gov/ceh/nceh/programs/lead/lead.htm>).and the General Accounting Office (GAO).

Except for a HUD grant program to cities, counties, and states, Title X is silent on the topic of how to pay for lead hazard control in privately owned units that generate insufficient income to pay for improvements and units with low-income owners. Also not discussed is how to deal with the problem of vast tracts of poorly maintained inner-city housing that

contain lead hazards (see Phoenix, 1998).

Conclusions. There is no doubt that tracking the incidence of chronic disease is a worthy endeavor. However, when viewed from the perspective of the evolution of cities, we see that a broader data base should be envisioned, that takes into account that the most important threat to public health in the United States is poverty. To be useful, in addition to data on the incidence of chronic illness, the data base should contain: n indicators of housing conditions and other conditions that pose threats to populations, n indicators of local responses sponsored by State, Federal and local governments, and n indicators of impediments to effective local responses.

These data points should be linked to the measures of incidence. For example, Philadelphia has widespread and severe problem with childhood lead poisoning, an active lead poisoning prevention program, and strong local laws aimed at compelling property owners to clean up deteriorated lead paint. However, so many owner-occupied dwellings house families lack funds to comply, that enforcing the law is not realistic unless the city can assist them. Likewise, forcing landlords to comply is rarely realistic, because of the low value of the land where most poisonings occur. The cost of repairs is often close to the total value of the unit or sometimes even exceeds the value of the unit. The economically rational landlord will abandon property rather than comply under these conditions.

Here's another thought to add to my recent comments re: data base tracking chronic illness. The Moving to Opportunity (MTO) experiment's early results include the finding that movers from high poverty to low poverty areas experience lower levels of crime and lower levels of medical care needed in such areas as asthma-related complaints (Goering, John et al. 1999 Moving to Opportunity for Fair Housing Demonstration Program: Current Status and Initial Findings. Washington DC: Office of Policy Development and Research, U.S. Department of Housing and Urban Development). This suggests that merely tracking illness without the context (i.e. poverty rate of the census tract, etc) would reduce our ability to address the underlying problems that elevate

the incidence of chronic illness. [Editor: Appreciation is extended to Barbara for her insightful discussion. She may be reached at Barbara_A._Haley@hud.gov]

V. Related Census, DHHS, FGDC and Other Federal Developments

February 2002 Report on Legislative Activities

National Center for Health Statistics, Office of Planning, Budget and Legislation

BIOTERRORISM

The Congress is now highly attuned to the need to improve the public health infrastructure so that the U.S. is ready to respond to terrorist incidents, and sensitivity to this issue is likely to continue throughout this congressional session. Legislators have already reacted to fears of bioterrorism in a number of ways. First, as discussed above, bioterrorism funds were included in emergency spending legislation attached to the FY 2002 defense appropriations act. Funds were appropriated to improve public health response capabilities at all levels of government, to produce anthrax vaccines, and to develop medicines to combat bio-toxins. Complementing the appropriations effort, both the House and the Senate have passed bills authorizing funding for a variety of new bioterrorism policy initiatives. Some of these activities were already funded for FY 2002, but these bills would set boundaries for use of the funds. Both bills include provisions to:

- *upgrade CDC facilities and public health laboratories;
- *expand the national stockpile of drugs and vaccines, including smallpox vaccines;
- *establish an Assistant Secretary for emergency preparedness in HHS;
- *enhance state and local preparedness including authorizing block grants for states to develop emergency response plans and improve public health departments;
- *encourage development of new medicines for anthrax and smallpox; and
- *improve food safety.

The Senate and House bills are not the same, however, so informal negotiations are underway and

reconciliation of these two measures is expected soon. The Senate bill includes broader provisions on food safety inspections and agricultural bioterrorism, while the House bill includes provisions on protection of drinking water supplies. Bills on other aspects of bioterrorism have also been proposed, particularly in the Senate. A Senate bill has been proposed to (among other things) authorize funds to improve coordination of disease surveillance and establish a nationwide database of medical information related to bioterrorism. A bill proposed by Senator Leland (D-GA) would clarify the responsibilities of CDC as opposed to law enforcement agencies when dealing with a public health emergency. Another Senate bill would authorize activities to protect the health and safety of community members and workers in disaster areas. It provides for collection and analysis of environmental exposure data, performing baseline health assessments, and conducting epidemiological studies to determine long term impact. Also, a number of bills have been introduced to address the mental health needs of those impacted by the terrorist attacks. No action has occurred on any of these bills.

Finally, a model state emergency health powers act, commissioned by CDC and drafted by public health and legal experts outside the agency to assist states in planning for a terrorist attack, has been released. This model law, which states are not required to adopt and which can be tailored to the particular needs of each state, would give states broad power to take action to protect public health in the event of a major bio-terrorist incident.

PRIVACY AND OTHER DATA ISSUES

Strong congressional interest in privacy continues although with a shift in focus as legislators are now weighing the right to personal privacy with the need for domestic security. For example, the possibility of establishing a national identification system - always a divisive issue on Capitol Hill - has been the focus of several hearings since September 11. One hearing on this issue was held by the Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations/House Government Reform Committee. In testifying, former Senator

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Simpson-an expert on immigration policy - advocated steps to reduce fraudulent access to documents including birth certificates that can be used to establish an identity. Given longstanding privacy concerns inherent in the national identification system proposal, supporters of this idea have a ways to go. A bill to develop standardized driver's licenses, however, is in the works in the Senate.

Major anti-terrorism bills proposed in the wake of September 11 included two provisions of interest. First, both bills included broad definitions of terrorism. Second, the Senate bill included a provision amending NCES' confidentiality statute to allow the Attorney General, with court approval, to obtain NCES survey information-reports, records, and information, including individually identifiable information-relevant to a terrorism investigation. The anti-terrorism bill that was ultimately signed into law (P.L. 107-56) included both the definitions of terrorism, which relate to discussions of how to classify the deaths resulting from the terrorist acts, and the change to NCES' confidentiality statute. The NCES statutory change also requires the Attorney General to issue guidelines to protect the confidentiality of the information.

A measure directed at computer security also saw action in the fall. The House passed a bill to facilitate the protection of federal computer systems holding sensitive (but unclassified) information. This bill, H.R. 1259, would require the National Institute of Standards and Technology (NIST) to assist other federal agencies in this regard. It charges NIST with developing measures for assessing the quality and effectiveness of information security and privacy programs at federal agencies, developing a list of approved commercial security products, performing evaluations to assess federal agency information security and privacy programs, and reporting to the Congress annually on federal computer system evaluations.

Congressional concern about identity theft remains high and two House hearings related to anti-terrorism activities touched on the issue of identity theft and Social Security Numbers (SSNs). A number of witnesses testified in support of H.R. 2036, the

Social Security Number Privacy and Identity Theft Protection Act, which would restrict the acquisition and use of SSNs. At a hearing focusing on how to prevent identity theft by terrorists and criminals, several witnesses supported-as a way to prevent identity theft-increasing the speed with which death data (and associated SSNs) are updated and available to the financial community. Another hearing on a bill to restrict use of SSNs, S. 1055-the Privacy Act of 2001, was postponed by the Technology, Terrorism, and Government Information Subcommittee of Senate Judiciary but may be held at a future date. This bill is sponsored by Senator Feinstein (D-CA), who chairs this subcommittee.

Responding to a report showing that 64 government web sites were using cookies to collect personal information about internet site users, Congress tapped an appropriations law to outlaw this practice. The law also prohibits federal agencies from buying such information about individuals who access or use nongovernmental internet sites. Exceptions are provided for aggregate data, voluntarily provided information, and system security purposes.

Conferees on the education reauthorization bill compromised on a modified version of House language regarding parental consent for surveys administered in schools that receive federal education funds. The House requirement for written parental consent before surveys can be administered to minors on certain sensitive topics is gone, replaced with a requirement for local educational agencies to develop policies, in consultation with parents, regarding administration of such surveys. The policies must address procedures for parents to review surveys, and must include procedures for notification of parents of the policies as well as offer opportunities for parents to opt out of participation. Among the sensitive topics subject to these provisions are: mental or psychological problems of the student or his family; sex behavior or attitudes; and illegal, anti-social, self-incriminating, or demeaning behavior. This language was included in the bill as signed into law (P.L. 107-110). [Report contact: Kathy Moss, NCHS Office of Planning, Budget, and Legislation, at kgm0@cdc.gov]

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 (pending DHHS membership) 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>]

Perspective on Homeland Security from New York City

Homeland Security Working Group, FGDC, January 31, 2002: Questions and answers with **Alan Leidner**

Homeland Security and E-Government Topics

[Alan Leidner is Director of Citywide Geographic Information Systems, NYC, Department of Information Technology and Telecommunications (DOITT), and also served as Director of Emergency Mapping and Data Center (EMDC) for the NYC Office of Emergency Management (OEM) in the months following September 11th]

Q: How do you deal with turf difficulties? How do you get people to share?

A: You need to find allies who can help build into your vision. You need to show them how they can save money by implementing certain procedures. That they can leverage their data by making sure that it is aligned. A way that OEM got cooperation was to offer agencies a \$25,000 study done by contractors recommending process improvements, etc. In some instances it is impossible to collaborate. For example, the NYC Sanitation Department does not use GIS. They still use directions written on paper to guide the trucks and they don't use maps and are reluctant to change the way they do business.

Q: If Feds are funded for a certain mission, they are not allowed to use the money for other things. Is NYC funded the same way?

A: NYC has line item approval through the NYC administration. Feds need to convince Capitol Hill to change the way the Feds do business due to their need for technology flexibility. Feds can use the argument of how NYC has money flexibility within the

administration.

Q: Where did NYC get their geospatial standards?

A: They relied on a company called PlanGraphics that used industry standards. FGDC Standards were assumed within the specifications.

History of GIS in NYC: Since the 1980's NYC has embarked on a digital GIS program. GIS is the very core of all City operations. The goal is to get geographic data to work as efficiently as possible. NYC built 3 digital maps. It took 5 years of underground campaigning for NYC to get a base map that would include registered street center line file, parcel map, and water mains and sewer layers.

GIS in NYC post-9/11: After 9/11 NYC experienced severe data losses but drew what they could find into Pier 92. They teamed up with a MITRE group from DOD that did modeling. FEMA teams got data from the debris pile. NYC worked with Feds and States to shoot aerial photography. In the first few weeks after 9/11 there was a lot of collaboration and deal making regarding maps and data products that could help save lives, and many relationships were formed. After the anthrax scares it took the Department of Health 2 weeks to model the flow of an envelope through the CBS building.

After the airline crash in Rockaway, the NYC Office of Emergency Management (OEM) wanted a map of the area. OEM got data to the field and set up a mapping operation near the crash site. After the plane crash in Rockaway the Harbor Police needed a chart to find debris and remains. OEM and FEMA did not know where to get such a chart. So they called the 24x7 Office of Homeland Security number to get the home phone number (since it was a Federal holiday) of someone who would know about the chart. It was FTPed in 50 minutes and received by FEMA. This is an illustration on how important it is to know where to find needed data. Data may not always be available on the Internet. This also underscores the importance of a full clearinghouse with an index of what is available where. There need to be procedures to get information anytime day or night in an emergency.

NYC still needs more deep infrastructure data to be included in their base map. They have an

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agreement with Con Edison (relating to a 100 year old franchise agreement) that Con Edison will provide maps of their infrastructure to NYC if the vital infrastructure data isn't available to the public and isn't shown to competitors unless there is something like a water main break that causes a need for collaboration. FEMA has a MultiHazard Mapping Initiative. Alan Leidner feels that real time data is important but he also wants to couple Federal research with private sector capabilities.

Prior to 9/11, OEM didn't know about all the technology that is available. They did not realize that there is instrumentation that sees through smoke. It took NYC 3 days to get clearance from the FAA to fly imagery. In a major catastrophe aerial photography is a necessity. It is important to have preplanned aerial photography missions. The best strategy is "build once, use thousands of times".

The Framework/Foundation basemap, imagery, planimetric information (building footprints) are very important to identify the geometry of the basemap so that all data can come into play, be mapped, and related to other data. In six months in the NYC basemap will allow someone to pick an address and get access to 50 databases related to that one location (to allow you to see everything that is going on in that one location). NYC OEM will open up their very accurate address database for Feds to check their data against.

Alan Leidner believes that an effective way to further the NSDI would be to have someone at a high Federal level give recognition of those doing something well- to give it political leverage. We need to wrap capabilities and requirements together for homeland security. Need to work with NSGIC and NACo and others to cover both city and National environments.

FGDC could ratify some 'best practices' for data suppliers regarding methodology etc. These 'best practices' are suggested in the A-16 but not prescribed. Need to have a National Academy for Geospatial Best Practices to collaborate with State and local governments to show them how to set up GIS and promote the collection of data that would benefit everyone. The Internet could help partner cities share

data. Eventually this would make the counties with no GIS director embarrassed.

Counties have a minimum data layer (1:24,000-scale). We need to move in the direction of using this information as 'velcro'. There are lots of suburban areas between the chosen 120 cities. USGS 1:24,000-scale maps are a good source for areas with little data. Although some USGS maps are 23 years old, old data is better than no data. There is both a spatial scale issue and a temporal scale issue.

E-GOV Perspective: NYC is undergoing 'Business Process Reengineering' moving to digital hand-held data collection to put the keypunchers to better use. They are trying to do things as efficiently as possible, need to redesign, do metrics and benchmarking. There should be a national course for reengineering so that it only needs to be done once and then distributed. Others shouldn't have to reinvent the process. NYC is working with IBM on reengineering and would like to develop a course. A lot can be done electronically and applications can be designed to allow this to occur.

NYC has been developing their new portal for E-Gov. How do you write a contract (RFP) that is enforceable and needs specific for help from private industry? There is a demand for functionality in procurement. Requirements are the key-consensus building on the requirements is needed. Intergovernmental reporting (studies and reports) is required to justify how money is spent.

In NYC the West Nile GIS application is on-line and could be the foundation for other applications. Residents can click the map and fill out a form and click send to have their information added. The message at the Steering Committee meeting earlier in the day was "we've got cash on the table and you tell us what is important and champion it" but it will also require home office time.

Public technology could be a warehouse for E-Gov applications. NASA used to run a library called COSMOS, where people could take out software and alter it for their own purposes. State, local and Federal entities could collaborate to make a warehouse for data and applications to be available at a low cost. There could be an applications library with metadata.

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If we can agree on common elements that meet local needs, these standards will provide a core from which to work. Standards are critical to interoperability. [Contact: Alan at aleidner@doitt.nyc.gov]

Web Site(s) of Interest for this Edition

<http://aspe.hhs.gov/datasources/> HHS Data Council Gateway to Data and Statistics. The HHS (Health and Human Services) Data Council has recently beta-

developed a portal to serve as a gateway to HHS data and statistics. It has been described as an HHS meta directory of data systems and resources. This web-based tool brings together key health and human services data and statistics. It is designed to complement other government resources such as FirstGov and FedStats. The Gateway covers federal, state and local government sponsored information.

<http://npr.org/programs/morning/features/2002/jan/seas/020115.seas.html> Troubled Seas Report: Farm Belt Runoff Prime Source of Ocean Pollution. Farm runoff throughout the Midwest finds its way into the Mississippi, which then dumps the chemicals into the Gulf of Mexico. Shown here in red, the gulf's oxygen poor "dead zone", or



hypoxic zone, created by the runoff. *Graphic: U.S. Geological Survey* [Source: *Morning Edition*, report by NPR's Allison Aubrey]

<http://www.cdc.gov/ncidod/dvrd/revb/nrevss/index.htm> The National Respiratory and Enteric Virus Surveillance System (NREVSS) is a laboratory-based

system that monitors temporal and geographic patterns associated with the detection of respiratory syncytial virus (RSV), human parainfluenza viruses (HPIV),

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respiratory and enteric adenoviruses, and rotavirus. Influenza specimen information, also reported to NREVSS, are integrated with CDC Influenza Surveillance. NREVSS data are made available to public health professionals, health care providers, and the public. In the past, NREVSS data have helped define and describe the epidemiologic features of respiratory and enteric viruses.

<http://www.fivims.net> Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS). The Key Indicators Mapping System (KIMS) was developed by the World Agriculture Information Centre (WAICENT) as a contribution of the Food and Agriculture Organization of the United Nations to FIVIMS. KIMS is user-friendly software, accessible to non-GIS specialists and developed for the specific purpose of collecting, mapping and disseminating food insecurity and vulnerability indicators that are relevant to FIVIMS. The UNICEF/WHO data sets were used to prepare the maps presented in this section. While these are not GIS maps, the files can be converted for GIS use.

http://srv1.aspensys.com/~rleather/gis_newsletter/index.html U.S. Department of Housing and Urban Development's (HUD) Center for Geographic

Information and Analysis (CGIA). The CGIA site is the portal to many useful tools such as HUD's Enterprise Geographic Information System (EGIS). The enterprise geographic information system (EGIS) is the second prototype of an Internet application that the HUD is developing with Environmental Systems Research Institute, Inc. (ESRI). The EGIS will provide users with easy access to mapping tools and HUD data to support housing and community development programs at the state, county, city, and neighborhood levels. HUD GIS housing databases will become part of other federal GIS distributed map servers.

<http://www.ngs.noaa.gov/TOOLS/Nadcon/Nadcon.html> NADCON is the Federal standard for NAD 27 to NAD 83 datum transformations. NADCON transforms latitude and longitude coordinate values between the North American Datum of 1927 (NAD 27) and the North American Datum of 1983 (NAD 83). NADCON is the Federal standard for NAD 27 to NAD 83 datum transformations. Advances in the accuracies now obtainable in geodetic surveys, specifically through use of differential GPS, has allowed for the creation of state High Precision Geodetic Networks (HPGNs), also referred to as High Accuracy Reference Networks (HARNs) throughout the country.

Final Thoughts

Building a National Environmental Health Tracking Network: Focus on Chronic Diseases

I am part of a second CDC task group, including ATSDR, EPA, and other state and local agencies assigned with the challenge to implement a national Environmental Health Tracking Network (EHTN). The first task group developed the plan entitled *CDC and ATSDR's Proposed Plan for an Environmental Public Health Tracking Network*, which describes a strategy to develop and implement an integrated tracking system; to develop a trained environmental health workforce, particularly at the state and local levels; and to improve collaboration among the agencies and organizations with public health and environmental responsibilities. By the time you read this our task group will be meeting for the third time since last December as we move forward toward this goal. We face a variety of issues, from database architecture and integration to metadata development to safeguards for privacy.

The EHTN is designed to serve the public and any observations Public Health GIS Users may wish to contribute to me are welcome.

Environmental Health: "The Gap"

A report by the PEW Environmental Health Commission, issued in January 2001 and entitled *America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network*, described a "gap"

in basic information that could document possible links between environmental toxins and chronic and other diseases. In the words of former senator Lowell Weicker, Commission Chair, “we know there are pollutants entering our air and water each year with suspected or known adverse effects on the health of our communities. What we are limited in knowing if there is a

Seven of every 10 Americans die each year from a chronic disease

link between that pollution and the increases we are seeing in chronic diseases because we aren't tracking environmental health factors.” (Companion Report, Environmental Health Tracking Project Team, Johns Hopkins School of Hygiene and Public Health, September 2000). From this report rose the proposal for the EHTN.

The Commission found there is need for a modern network- much like that of the 50 infectious diseases tracked nationally by CDC- to track chronic diseases and discover environmental contributions to them. To begin, all 50 states would collect data on a) birth defects, b) developmental disabilities such as autism, cerebral palsy and mental retardation, c) asthma and chronic respiratory diseases such as chronic bronchitis and emphysema, d) cancer, including childhood cancers, and e) neurological diseases, including Parkinson's, Multiple Sclerosis and Alzheimer's. It recommended a National Environmental Report Card be developed jointly by CDC and EPA by 2003 with an overview of key environmental factors and health outcomes. That the federal government establish minimum national standards for exposure data e.g., persistent organic pollutants such as PCBs and dioxin; heavy metals such as mercury and lead; pesticides such as organophosphates and carbamates; air contaminants such as toluene and fine particles; and drinking water contaminants, including pathogens.

The Commission recognized that while adverse health effects from short-term, high-level exposures to certain chemical toxins and other environmental contaminants are well known, much less is known about health effects that may result from long-term, low-level exposures. For example, there are growing local health concerns about possible environmental links to attention deficit disorder, lupus, and endocrine disorders such as diabetes.

The human exposure component of an environmental public health tracking system is biomonitoring or the assessment of human exposure to chemicals by measuring the chemicals or their metabolites (breakdown products) in human specimens, such as blood and urine. CDC has led in its development and implementation. CDC's first national report of Human Exposure to Environmental Chemicals has already provided information about levels of 27 environmental chemicals in the United States population. These substances include metals (lead, mercury, and uranium), organophosphate, pesticide metabolites, phthalate metabolites, and cotinine (a marker of tobacco smoke exposure). The primary example of a successful tracking system and public health outcome is that of childhood lead poisoning, where CDC had compiled lead hazard, human exposure, and childhood lead poisoning data since the mid-1970s. These data were instrumental in EPA's efforts to remove lead from gasoline, which resulted in dramatically reduced average blood lead levels in the U.S. population.

The Commission also cited the nation's preparedness against biological and chemical terrorism. It underscored the need for a strong tracking infrastructure that can rapidly detect and respond to disease outbreaks associated with terrorist acts. With an early warning system attuned to environmental exposure signals, a terrorist or accidental release of toxic chemicals could be responded to rapidly. A first stage of response would include early warning signs of acute sensory irritation such as eye and respiratory problems, heavy metal poisoning and pesticide poisoning. These environmental health sentinel exposures would build on the existing infectious disease monitoring network e.g., partnerships of hospitals, poison centers and public health agencies.

A report by EPA, **“America's Children and the Environment: A First View of Available Measures”** (National Center for Environmental Economics, Office of Children's Health Protection, EPA 240-R-00-006, December 2000), presents measures reflecting trends in levels of environmental contaminants e.g., the five media of outdoor air, indoor air, drinking water, food and soil, most likely to affect children's health. The second section includes measures to reflect trends in exposures as determined by key contaminants in children's bodies e.g., lead

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concentration in the blood of children. The last section includes measures of selected childhood diseases e.g., asthma, chronic bronchitis, and childhood cancer, associated with environmental factors. And there are other environmental contaminants and exposures of interest identified but for which there are no existing trend data.

Related to both of the above reports are the national objectives of **Healthy People 2010**. Healthy People 2010 is the U.S. Department of Health and Human Services prevention agenda for the nation (see <http://www.cdc.gov/nchs/about/otheract/hpdata2010/abouthp.htm>). This initiative details a national prevention strategy for significantly improving the health of the American people. Environmental Health objectives include a variety of monitoring variables and measurements on Outdoor Air Quality (e.g., harmful air pollutants; ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, cleaner alternative fuels and others); Water Quality (e.g., safe drinking water, waterborne disease outbreaks, fish contamination and others); Toxics and Waste (e.g., elevated blood lead levels in children, risks posed by hazardous sites, National Priority List sites, Resource Conservation and Recovery Act facilities, leaking underground storage facilities, Brownfield properties, pesticide exposures and others); Healthy Homes and Healthy Communities (e.g., homes tested for radon, school policies to protect against environmental hazards, disaster preparedness plans and protocols, substandard housing and others); Infrastructure and Surveillance (e.g., exposure to pesticides such as naphthol, trichloro-2-pyridinol, and others, exposure to heavy metals and other toxic chemicals such as arsenic, cadmium, lead, mercury, polychlorinated biphenyls, and dioxins, conditions such as methemoglobinemia, asthma, hyperthermia and hypothermia, skin cancer, birth defects and others).

In addition, there exists "**America's Children: Key National Indicators of Well-Being**" the annual report of the Forum on the well-being of children (see <http://www.childstats.gov>). Data are presented on many facets of child well-being, including general population data, health, behavior and social environment, and education. This Interagency Forum on Child and Family Statistics is composed of representatives of all the Federal statistical agencies. Perhaps the most comprehensive work is a consensus set of recommended 73 indicators for chronic disease surveillance by the combined Council of State and Territorial Epidemiologists, Association of State and Territorial Chronic Disease Program Directors, and the National Center for Chronic Disease Prevention and Health Promotion, CDC (Indicators Volume-Lengerich, EJ (ed). **Indicators for Chronic Disease Surveillance: Consensus of CSTE, ASTCDPD, and CDC**. Atlanta, GA: Council of State and Territorial Epidemiologists, November 1999, and **Data Volume**-Lengerich, EJ (ed). June 2000 (revised October 2000). The chronic disease indicators described here join the National Notifiable Disease Surveillance System (mostly infectious and communicable diseases), already in the National Public Health Surveillance System (NPHSS).

Timely Role for GIS

GIS technology and science is expected to play an important surveillance and spatial analytic role in the environmental public health tracking network or EHTN. Both ATSDR and EPA can contribute effectively in this effort. ATSDR has extensive GIS experience in conducting public health assessments of communities. There are three main ways ATSDR gathers information in an exposure investigation: bio-medical testing (for example, blood or urine sampling); environmental testing (for contaminated soil, air or water); and exposure-dose reconstruction (using environmental data and computer models to estimate past exposures). The results of exposure investigations are used to make public health decisions and to recommend appropriate public health actions. For example, the New York City Department of Health and ATSDR released the results of air and dust sampling in the World Trade Center area of lower Manhattan in February 2002. Low levels of asbestos and fibrous glass are among the materials found in dust samples taken from residences and the common areas of residential buildings. Further samples are being analyzed (see <http://www.atsdr.cdc.gov/>).

EPA maintains a number of vital data bases that can be critical elements of a nationwide environmental public health tracking network, notably its Toxics Release Inventory. EPA also has become a leader in developing

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advanced data integration systems, and one in particular that I will discuss below. These systems will be able to integrate and enhance the accessibility of complex environmental hazard data; they are expected to be integral components of the CDC/ATSDR tracking network.

EPA has recently unveiled a new GIS environmental tracking system for the Internet (see www.epa.gov/enviro/wme). It is the creation of geographer and colleague David Wolf, Internet Geoservices Manager, Office of Environmental Information, EPA. The WME stands for “Window to My Environment” and it is designed to provide a wide range of federal, state, and local information about environmental conditions and features in any U.S. location of your choice. It is a broad reaching application in partnership with federal, state and local government and other organizations. In essence, it is a collection of Internet services from Census, U.S. Geological Survey, FEMA, NOAA, and EPA. The data one finds in the application reside at their respective agency servers. Thus everyone manages their own data and its timeliness. EPA software with ArcIMS and Oracle database functionality drive the interactive mapping and statistical responses by transparent data extraction from distributed partnering servers. There is no limit to the latter and one can conceive any agency as a participant. In fact participating partners can create a similar interface on their home server as EPA connectivity is two way. Jon Sperling, geographer and colleague now at HUD, similarly will expand the new HUD Internet GIS (see <http://hud.esri.com/egis>) to take advantage of other databases resident on this network.

As you visit and test the WME application, please inform David (wolf.dave@epa.gov) and me of any deficiencies or comments for improvement for the system. David is at work to make air and water quality measurements as real time as available. That is WME can go to data monitoring and reporting sites at EPA, NOAA and USGS, respectively, to integrate these real time data layers with other known environmental hazards posing potential exposures. The door is open for public health data. CDC/ATSDR databases can be integrated as an equal partner in WME. Conceivably data streams containing CDC county mortality and vector-borne disease statistics can be accessed into the system. David, Jon and I will meet next on this topic with Nabil Issa, Associate Director for Health Informatics, National Center for Environmental Health, CDC, who helps lead the EHTN initiative.

To return to the Commission report, “the time is right” to strengthen the national infrastructure for environmental health tracking, expand public access to this information and protect the confidentiality of individuals. The tools to accomplish these challenges are available in new communication and information technologies. The need for partnerships at all levels of government, agency and organization are critical. As the federal government supports and guides the vision, state and local public health agency databases will ultimately become the key building block for a Nationwide Health Tracking Network (as example, see **California’s Senate Bill 702** at <http://www.leginfo.ca.gov/pub/bill/sen>, that would establish state health tracking to track chronic diseases like asthma, Parkinson’s Disease and cancer as well as their links to environmental hazards. “The result [of the national Network] will be new strategies aimed at reducing and preventing many of the chronic diseases and disabling conditions that afflict millions of Americans.”

Charles M. Croner, Ph.D., Editor, *Public Health GIS News and Information*, Office of Research and Methodology, National Center for Health Statistics at cmc2@cdc.gov. While this report is in the public domain, the content should not be altered or changed. This is the 45th edition with continuous reporting since 1994.

Please join us at NCHS on April 16, 2002 for the Metadata Tutorial

Our GIS home page at <http://www.cdc.gov/nchs/gis.htm> contains archived reports