

Epi Notes



North Carolina Department of Health and Human Services ♦ Division of Public Health

Volume 2005-1

March 2005 - May 2005

In This Issue:

Gonorrhea and Chlamydia Testing in Special Population	1
The Food Emergency Response Network and Interagency Laboratory Coordination	2
National Black HIV/AIDS Awareness and Information Day in NC	3
Sequenced Based Bacterial Identification	3
The Occupational and Environmental Epidemiology Branch Increases Capacity to Respond to Chemical and Radiological Terrorism	4
State Laboratory Offers New Test for Algal Toxins	5
Heartbreaker Breaks New Ground ...	6
A New Chemical Antidote Resource to be Exercised	7
Operation Plotthound	7
NC EDSS Update	8
Reported Communicable Diseases, N.C. January-September 2004	10
Employee Recognition: Denise Lewis Employee of the Quarter	11
Online Certificate in Field Epidemiology Available in Fall 2005	11

Gonorrhea and Chlamydia Testing in Special Population

*Prepared by Pete Moore, Unit Manager, Field Development
HIV/STD Prevention and Care Branch*

Office of Juvenile Justice

In 2003, The HIV/STD Prevention and Care Branch (hereafter referred to as the Branch) identified \$25,000 in Infertility Prevention Project (IPP) funding to start an adolescent screening project with the Department of Juvenile Justice and Delinquency Prevention (DJJDP). These funds were used to support gonorrhea and chlamydia testing among adolescent males and females entering DJJDP's Youth Detention Centers (YDC). Screening is currently done on all juveniles entering one of two youth detention centers (C.A. Dillon and Samarkand) using urine-based nucleic acid amplification testing. The project is expected to screen approximately 400 males and 100 females in 2005.

In 2004, the project screened 478 youth (384 males and 94 females). The total racial breakdown was 124 (25.9%) White, 330 (69%) Black/African-American, 8 (1.7%) Hispanic, 8 (1.7%) Native American, 5 (1.1%) Asian/Pacific Islander and 3 (0.6%) other. The screening resulted in the identification of 10 cases of gonorrhea (GC) and 54 cases of chlamydia (CT). All of those who tested positive received free STD treatment and counseling on site and in accordance with 2002 CDC Treatment Guidelines.

Of the males screened in 2004, 36 (9.4%) were positive for chlamydia and five (1.3%) were positive for gonorrhea. All five of the GC positive males were also positive for CT and are included in the CT percent above. Of the females screened, 18, (19.1%) were CT positive and five (5.3%) were GG positive. Only one of these GC cases was also CT positive. Black males were more likely than white males to test positive for at least one of the two STDs (12.1% compared to 3.0%). However, white females were slightly more likely than black females to test positive for at least one of the STDs (24.0% compared to 22.7%).

On January 5, 2005, representatives from the Branch and DJJDP met with representatives from the North Carolina State Laboratory of Public Health (NCSLPH) to work out a transfer of testing responsibilities. This change would move testing from Lab Corp to the NCSLPH which is currently transitioning from urethral swabs

(continued on page 2)

(Gonorrhea and Chlamydia Testing , continued from page 1)

to urine-based testing for GC and CT. This change will benefit the project in three ways: (1) it will provide a reliable source of data for project evaluation by using the standardized NCSLPH lab test request form, (2) will allow more data comparisons as similar data is already being collected as part of IPP and (3) it will streamline funding by creating a formal agreement between the Branch, DJJDP and NCSLPH.

The NCSLPH will receive funding from the Branch's IPP project to provide testing for this project. The DJJDP will offer testing to all adolescents assigned to the two testing sites as well as provide treatment and counseling for those who test positive. The Branch will provide technical support, conduct quality assurance chart reviews, as well as supply STD Drugs for treatment. Since this project is part of larger CDC funded IPP; CDC data reporting requirements as part of the IPP will be reviewed by the Branch's STD Epidemiologist.

Historically Black Colleges and Universities (HBCU) Screening

The Region IV Infertility Prevention Project (IPP) focuses on the prevention of chlamydial infection through the collaborative efforts of health care providers, especially through sexually transmitted disease and family planning programs and state labs throughout the region. The overall goal of this project is to assess and reduce the prevalence of chlamydia infection and its associated complications throughout Region IV by utilizing the tools of education, screening and treatment. Region IV consists of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

To help promote chlamydia awareness, Region IV conducts a chlamydia awareness campaign in the spring (March/April). This campaign is currently targeting college students, and Project representatives from North Carolina (HIV/STD Prevention and Care Branch, State Laboratory of Public Health and Women's and Children's Health) are declaring March "Chlamydia Awareness Month" in North Carolina. In conjunction with this, five historically Black colleges and universities (NC A&T, Elizabeth City State University, Fayetteville State University, UNC Pembroke and Winston-Salem State University) have agreed to participate in a chlamydia/gonorrhea testing and education campaign. This campaign consists of two strategies, education and testing. Peer educators from the college/university campuses will distribute flyers and brochures and will conduct education of students on GC/CT transmission and prevention during the month of March. For two weeks during March the student health centers at the participating HBCUs will also provide free testing for both GC/CT using a urine based testing method. HIV and syphilis counseling testing will also be offered during this campaign. The test kits for this project were donated by the

Region IV IPP project and the testing will be done by the North Carolina State Laboratory of Public Health. ▲

The Food Emergency Response Network and Interagency Laboratory Coordination

*Prepared by Leslie A. Wolf, Assistant Laboratory Director
North Carolina State Laboratory of Public Health*



Following the events of September 11, 2001, the vulnerability of the nation's food supply was examined carefully by federal and state agencies. It became clear that both the magnitude and complexity of the food supply chain in the United States lends itself to both intentional and unintentional contamination events. Homeland Security Presidential Directive-9 (HSPD-9) was issued on January 30, 2004, recommending development of appropriate systems to track specific animals, plants, and food commodities, as well as development of nationwide laboratory networks for food, veterinary and plant health and water quality. This would be accomplished by using integrated, interconnected existing federal and state laboratory resources that employ standardized diagnostic procedures. Thus, plans were initiated at federal, state and local levels to address these recommendations.

The concept for an integrated national network of laboratories that had expertise in food testing was shared originally in early 2003, and the organization of such a network was shared in early 2004 following HSPD-9. Since then, the US Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) have been leading the charge in recruiting state laboratories that have food testing capabilities to form the Food Emergency Response Network (FERN). This network consists of state agriculture and public health laboratories, plus federal FDA and USDA laboratories that have responsibility for detection and identification of biological, chemical and radiological contamination in food samples. The primary objectives of FERN include the following:

- **Prevention** by utilizing federal and state surveillance sampling programs to monitor the food supply
- **Preparedness** by strengthening federal, state, and local laboratory capacity and capabilities through training and new method development
- **Response** by building surge capacity to handle terrorist attacks or any other national emergency involving the food supply
- **Recovery** by supporting recalls, seizures and disposal of contaminated food to restore confidence in the nation's food supply

(continued on page 3)

(The Food Emergency Response Network, continued from page 2)

Many of the state laboratories are members of the CDC's Laboratory Response Network (LRN), that have responsibility for detecting *Bacillus anthracis* and ricin, and responding to other public health threats. FERN laboratories will be coordinated on a regional basis, and the newly formed FERN Division in the USDA's Food Safety and Inspection Service (FSIS) will work with FDA to expand, manage and integrate FERN laboratories. Coordination and communication between these state and federal laboratories is an important step in protecting the safety of the nation's food supply due the complex nature of regulations at the state and federal levels.

North Carolina's fragmented regulatory system for foods reflects the federal system to some extent, which has evolved over time to deal with a variety of food safety issues. In any food supply system, it is important to have oversight from farm to fork. The implication is that animal (livestock) and plant health, food processing and manufacturing plants, grocery stores and restaurants, and consumers all play important roles in food safety and security planning. For example, in North Carolina the Department of Agriculture (NCDA) has a Meat and Poultry Inspection Service that works closely with USDA's FSIS to inspect large and small meat and poultry processing plants. Animal health (livestock) issues are the responsibility of the NCDA's Veterinary Division, while retail food sampling and complaint investigations are the responsibility of NCDA's Food and Drug Protection Division. A different agency, North Carolina's Department of Environment and Natural Resources (DENR), has responsibility for regulating grade A milk, shellfish and restaurant/institutional sanitation inspections. If additives are made to shellfish, then DENR does not regulate this modified shellfish, but instead it is turned over to NCDA for regulation and inspection. In yet another agency, North Carolina's Department of Health and Human Services (DHHS), resides the Division of Public Health (DPH) and the State Laboratory of Public Health (SLPH) that has responsibility for testing patient specimens and food samples from suspected foodborne outbreaks. In addition, SLPH tests grade A milk products and some complaint samples for the DENR Grade A milk program. The Food and Drug Protection laboratory, however, tests manufacturing grade milk, used to make cheese and cheese products. To further complicate matters, pizza may be regulated by FDA if it has cheese only, but by USDA if meat (such as pepperoni) is added. Whether sandwiches are open or closed, contain meat and/or cheese, also determines which agency has jurisdiction. Clearly the food system is fragmented in the United States and cries for collaboration, integration and cooperation.

In North Carolina, two agencies have committed to participating in FERN. NCDA's Food and Drug Protection Laboratory (Constable) will serve as a FERN laboratory for test-

ing biological and chemical contaminants in food. DPH's SLPH will serve as a FERN laboratory for biological and radiological contaminants. SLPH participated in two FERN proficiency test events in late 2004, with one event involving microbiological examination of milk for *B. anthracis* and the other involving radiological examination of fruit juice. Efforts to coordinate NC state laboratory capabilities have been underway for well over a year. Meetings between key staff members at SLPH, Constable and the Veterinary Diseases Diagnostic Laboratory (Rollins) have led to establishing an emergency contact list, sharing information about laboratory capabilities, and compiling current personnel, methods and equipment inventories. Future goals of this laboratory committee are to cross-train employees for surge capacity, to implement new methods as FERN releases them, and to better define roles of each laboratory during an emergency situation. Development of memoranda of agreement (MOA) between the laboratories would add formality to the relationships the members have been building over the past year. Knowing the food safety and security partners in each agency will go far toward planning for and responding to a food emergency. ▲

National Black HIV/AIDS Awareness and Information Day in North Carolina

Prepared by Renee Bowie, Program Consultant, NC HIV Prevention & Community Planning Unit, HIV/STD Prevention & Care Branch



On February 7, 2005, black leaders and organizations in North Carolina responded to the impact of HIV and AIDS in black communities during the fifth annual observance of National Black HIV/AIDS Awareness & Information Day (NBHAAD). A march and a public information forum were held in Raleigh to encourage citizens to **get educated, get tested, and get involved** with HIV/AIDS as it continues to devastate black communities.

The observance began at 10 a.m. with a 30-minute HIV/AIDS Awareness March led by North Carolina Central University's Marching Band and ended with a public information program at the North Carolina Museum of History. A march of this magnitude, highlighting HIV/AIDS in North Carolina, had not been planned or executed in over ten (10) years. The march drew a crowd of approximately 350 participants.

After the band's grand finale, the program commenced with opening remarks from Dr. Leah Devlin, North Carolina State Health Director, on the steps of the North Carolina Museum of History. March participants then assembled in the museum's auditorium for the remainder of the program to hear community messages aimed at reducing and/or elimi-

(continued on page 4)

(NBHAAD, continued from page 3)

nating the devastation of black communities due to HIV/AIDS. The audience heard perspectives from the historically black colleges and universities, elected officials, the faith community and African American consumers who are infected with and/or affected by HIV/AIDS.

Why do we need to heighten awareness? “Seventy-two African-Americans are infected with HIV every day. African-Americans make up approximately 12 percent of the population of the United States, yet 38% percent of total AIDS cases reported in this country are among members of the black community. In 2003, more African Americans were reported to have HIV/AIDS than any other racial/ethnic group. In North Carolina, 70 percent of people diagnosed with HIV/AIDS are black.” For this reason alone, observations of this nature are very important to heighten awareness and persuade African Americans to get educated, get tested and get involved in HIV/AIDS prevention efforts.

National Black HIV/AIDS Awareness & Information Day is co-funded and sponsored by the Community Capacity Building Coalition (CCBC), a coalition of organizations committed to halting the spread of HIV/AIDS in African American communities. The coalition is funded by the Centers for Disease and Control and Prevention (CDC) through the National Minority AIDS Initiative. Federal funds received from CDC prevention projects were used to support this activity.

For more information about National Black HIV/AIDS Awareness & Information Day visit the website at www.blackaidsday.org. ▲

Sequenced Based Bacterial Identification

Prepared by Chris Goforth & Royden Saah, Bioterrorism & Emerging Pathogens Unit, NC State Laboratory of Public Health

One role of the NC State Laboratory of Public Health (NCSLPH) is to function as a clinical reference laboratory to hospitals, health departments, and private laboratories. The Microbiology Unit serves as the main reference section for bacteriological services, while the Bioterrorism and Emerging Pathogens Unit develops and implements new technologies that would help the laboratory maintain capacity for the identification of intentional or emergent threat agents, as well as crisis response to these threats. Both groups have collaborated in an effort to identify, through ribosomal 16S gene sequence analysis, the most problematic or previously unknown bacteria that are referred to the laboratory.

All bacterial organisms contain an area in their genome, or genetic material, known as the ribosomal 16S region. This region is remarkably conserved, or similar, even in the most distantly related bacteria, however, areas of variability also exist. The conserved sections allow the microbiologist to

locate the gene while sequence variations usually permit a bacterial identification to the species level.

In the summer of 2003, the NCSLPH began to develop and incorporate this procedure. An initial validation of the 16S analysis included testing 43 organisms, some of which were different strains of the same bacterial species, to ensure reproducibility. After the 16S region was sequenced, searches for similar sequences conducted in the GenBank[®] database identified all bacteria to the specific family. Seven (16%) had two or more matches all in the same family while the remainder (84%) were accurately identified to the species level. Since this initial validation, approximately 300 bacteria have been sequenced with similar identification success rates. Due to the expense in both time and money, this technology is used when an organism is difficult to classify using the traditional methodologies or an identification is needed in a rapid manner. Even if the result of the sequence analysis only identifies the bacterium to the family level, it is still useful when selecting additional tests. Using the sequence data, the microbiologist can cross reference the biochemical results to that organism's expected biochemical data and confirm an identification. Another advantage to using this genetic technique is the ability to classify a bacterium that is no longer viable due to transit or processing errors. The NCSLPH can also use it to classify bacteria that unculturable.

For this process to be valuable, three tools had to mature simultaneously. The first tool is sequence analysis itself, being able to generate a DNA sequence through PCR replication followed by a gel separation. The second is the software development that allows a DNA sequence to be compared to that of millions of other sequences each containing thousands of basepairs in just a few seconds. Lastly, a very large 16S ribosomal gene sequence database was established. These technologies combined to allow worldwide database searches that yield bacterial identification with faster turnaround times. ▲

The Occupational and Environmental Epidemiology Branch Increases Capacity to Respond to Chemical and Radiological Terrorism

Prepared by Bill Pate, Supervisor, Medical Evaluation Risk Assessment Unit, Occupational and Environmental Epidemiology Branch



In a continuing effort by North Carolina to ensure a timely, adequate, and coordinated overall response to intentional and unintentional emergencies, a position has been funded by the North Carolina Public Health Preparedness and Response program within the Occupational and Environmental Epidemiology Branch (OEEB) to prepare for and respond to emergencies involving chemical or radiological agents. Mr. Peter Costa has been recently hired for this position, and began his work

(continued on page 5)

(Chemical & Radiological Terrorism , continued from page 4)

here on February 7, 2005. By developing and implementing a plan for increased epidemiological surveillance capability and amplifying inter-agency alliances, Peter will assist in the on-going effort to prepare the State of North Carolina to prepare for and respond to many kinds of emergencies.

In 2002, Peter received his Bachelor of Science degree from East Stroudsburg University of Pennsylvania. He received his Certified Health Education Specialist (CHES) certification in April 2004 from the National Commission for Health Education Credentialing and in May 2005 he will receive a Masters Degree in Public Health. Before being hired by OEE, Peter worked in Pennsylvania at the Bethlehem City Health Bureau in the Public Health Preparedness and Response Program as an Emergency Preparedness Planner. His major responsibilities included preparedness and response planning, workforce competency development and exercise simulation. While at the Health Bureau, he served as a member of the regional anti-terrorism taskforce planning committee and participated in the Northeastern Pennsylvania Emergency Response Group.

In his new role as chemical/radiological epidemiologist under the direction of Dr. Douglas Campbell, the OEE Branch Head, Peter will develop and implement a plan to bolster public health preparedness, surveillance, and response capacities for intentional terrorist-related chemical or radiological events as well as unintentional accidental events. Examples of such events include releases of radiation from nuclear power plants, detonation of a "dirty bomb", release of a chemical agent as a terrorist act, and inadvertent releases of chemical or radiological agents on a scale that has the potential to harm public health. In these events, he will assist with the crisis phase response and the recovery phase response in order to help mitigate health hazards, prevent exposures, and minimize injury through epidemiological assessments, evaluations and expertise. Peter will be headquartered in the Occupational and Environmental Epidemiology Branch in Raleigh and will serve as a liaison between several different departments and work closely with many other agencies that are responsible for terrorism response. Such agencies/departments include the Office of Public Health Preparedness and Response, Department of Environment and Natural Resources, Radiation Protection Section, Department of Agriculture and Consumer Services and the Public Health Regional Surveillance Teams (PHRSTs). Each agency will be extremely vital in their aspect of the response effort and Peter hopes to work with each of them in developing and refining his plans to implement surveillance protocols for and response measures to chemical/radiological events. ▲

State Laboratory Offers New Test for Algal Toxins

Prepared by Ann Chelminski, MD, MPH, Medical Epidemiologist, Occupation and Environmental Epidemiology Branch; John Neal, MS, Chemistry Manager, Environmental Sciences Unit, State Laboratory of Public Health; and Mina Shehee, PhD, Program Coordinator, Harmful Algal Blooms Programs, Occupational and Environmental Epidemiology Branch



The State Laboratory of Public Health (SLPH) will offer a new algal toxin test panel for recreational and municipal freshwaters beginning April 1, 2005. This test is available at no cost to local, regional, and state government water and public health agencies including public drinking

water systems. Funding for this testing is through a cooperative agreement among the Harmful Algal Blooms (HAB) Program, Occupational and Environmental Epidemiology (OEE) Branch, North Carolina Division of Public Health (DPH) and the Centers for Disease Control and Prevention (CDC).

Under certain environmental conditions, freshwater algae may increase to large numbers, referred to as an algal "bloom." Blooms can adversely affect aquatic plants and animals, domestic animals and wildlife, and humans. In particular, the cyanobacteria (a.k.a. blue-green algae) may produce toxins that can cause liver, central nervous system, skin, or gastrointestinal health effects in humans. The most notable potential toxin-producing cyanobacteria genera include *Anabaena*, *Aphanizomenon*, *Cylindrospermopsis*, *Lyngbya*, and *Microcystis*. The toxins produced by these genera include microcystins, cylindrospermopsin, saxitoxin, anatoxins, and endotoxin (lipopolysaccharide).

Cyanobacterial toxins are listed on the US Environmental Protection Agency's (USEPA) "Contaminant Candidate List" for drinking water. Potentially toxic cyanobacteria species occur in North Carolina recreational and municipal freshwaters. Microcystins have been detected in North Carolina recreational and untreated drinking waters. To date, treated drinking water concentrations of microcystins in NC have not exceeded 1.0 ug/ml, the World Health Organization human health alert concentration. Most public water systems are able to reduce the concentration of this toxin through the use of best available technologies (e.g. granulated activated carbon).

By providing this service, the HAB program hopes to build public health infrastructure, get additional data on the occurrence and frequency of HAB events in North Carolina, support surveillance activities, and prevent illness associated with

(continued on page 6)

(New Test for Algal Toxins, continued from page 5)

cyanobacterial blooms. The first algal toxin to be offered on the panel is microcystins, a toxin that can cause liver injury. Additional toxins will be added to the panel as they become available.

The mechanism for providing this testing is similar in scope to other chemical analyses offered by the SLPH. Testing kits are available at numerous sites this spring, including Department of Environment and Natural Resources regional offices and municipal water plants. Additional kits may be requested from the HAB Program by calling the toll-free HAB Hotline at (888) 823-6915. Each sampling kit includes sample collection materials and instructions for use. The sampling protocol and instructions will be posted on the NC HAB web site (<http://www.epi.state.nc.us/epi/hab>). A pilot study using this protocol by several municipal water systems was completed in 2004. The results of the pilot study have been accepted for poster presentation at the American Society for Microbiology General Meeting to be held in Atlanta June 2005.

An increase in the number and frequency of potentially toxic algal blooms is expected in the future as increases in population, land use, and nutrient run-off continue to stress watersheds. Algal toxin testing is essential for the detection of HAB events and prevention of illness. It is strongly recommended that freshwaters be tested for algal toxins whenever there is a bloom in water used for recreation or as a source of drinking water, especially when there is a high concentration or surface scum of cyanobacteria present. Testing should also be done when there are human health complaints, taste and odor-related drinking water complaints, and/or death(s) of domestic animals (e.g. pets and livestock) after ingestion or contact with bloom waters. For more information on harmful algal blooms or toxin testing, contact the HAB Program Coordinator, Dr. Mina Shehee at (919) 733-3216. ▲

Heartbreaker Breaks New Ground

*Prepared by Bill Furney, Information Communication Specialist,
Office of Public Health Preparedness and Response*



The Heartbreaker exercise coordinated by the Office of Public Health Preparedness and Response (PHP&R) was so named because of its occurrence on Valentine's Day and the fact that participants would not be home to celebrate, but the four-day exercise that began on February 14 and conducted at Gaston College was anything but a heartbreaker.

In a first for North Carolina, Heartbreaker tested the public health response system's ability to deploy all seven Public Health Regional Surveillance Teams (PHRSTs) at the same time and provided participants with four credible health threat scenarios notionally caused by terrorists. The deployment

itself was the first part of the exercise challenging PHRSTs to accomplish several tasks before leaving their host counties and while on route to the exercise site at Gaston College.

As members of the seven PHRSTs arrived at Gaston College on the first day they were reorganized into four "task forces" that would rotate through each of the four modules over the next two-days. The threats were presented in three-hour modules – one in the morning and one in the afternoon – that included biological, chemical, radiological and mass casualty scenarios. In addition to testing PHRST members' abilities and training, the four modules were designed to help identify communication shortfalls, resource shortages, and anything in general that might need improvement. The PHRST members completed more than 25 exercise objectives and the exercise helped PHP&R staff identify 11 tasks that need to be addressed to improve overall response performance. The areas to be addressed include:

- Additional incident command system training for all PHRST members.
- Refinement of SOPs to provide guidelines for the deployment of the PHRSTs.
- Development of a standard equipment inventory checklist for the PHRSTs.
- On-going radio training.
- On-going IPAC training.
- Improved communications with the HAN.
- Clarification of the public health role in responding to a mass casualty event.
- Clarification of the public health role in responding to a radiological event.
- Clarification of the public health role in responding to a chemical event.
- Clarification of PHRST authority in responding to a terrorism event.
- On-going time spent with public safety officials to further understand roles at terrorist events.

Exercise participants included representatives from the Regional Emergency Training Service Center at Gaston College, the Office of Emergency Medical Services, the Occupational and Environmental Epidemiology Branch, NC Radiation Protection, the Department of Agriculture and Consumer Services, NC Emergency Services, and the Division of Public Health's Injury and Violence Prevention Branch. There were 54 participants, 44 staff and facilitators, and 75 victims/role players. The exercise concluded on the fourth day with a review and evaluation of the previous three days' events. ▲

(continued on page 7)

NC EDSS Update

*Prepared by Allison Connolly, MA, MPH, NC EDSS Coordinator
General Communicable Disease Control Branch*

The requirements for NC EDSS (North Carolina Electronic Disease Surveillance System) have been completed. Requirements were defined in the following program areas:

HIV/STD

TB

General Communicable Diseases

Adult Blood Lead Epidemiology and Surveillance

Childhood Lead Poisoning Prevention

Immunization (Vaccine Preventable Diseases)

Animal Rabies

Violent Death Reporting

NC EDSS requirements were also defined for management of outbreaks and GIS.

Currently, the NC EDSS Project Team is writing an RFP (Request for Proposals) for the work to be completed during the next phases of the project. It is expected that a five-year contract will be awarded, with the first two years dedicated to the development, configuration, testing, and implementation of the system throughout the state. Efforts during remaining three years of the contract will focus primarily on operations and maintenance.

We hope the winning vendor will begin work in mid-fall. This date may change, depending on factors such as the length of time needed for State review and approval of the RFP, as well as the number of bidders who submit proposals.

The extent to which NC EDSS will incorporate functionality for the program areas listed above will depend on many factors, including available funding, bid pricing, and the systems which vendors propose for North Carolina.

In preparation for the posting of the RFP, the NC EDSS Project Team has learned a lot about the approaches other states have taken to NEDSS (National Electronic Disease Surveillance System). During the requirements gathering effort, we conducted interviews with five states, each of which had selected a different NEDSS product, to find out how they approached the development and implementation of their systems. In fall 2004, we also posted an RFI (Request for Information) regarding NEDSS products. By way of the RFI, the NC EDSS Project Team and many other DPH employees had the opportunity to see demonstrations of six NEDSS products currently being used by at least one state or city in the U.S.

As a result of efforts such as these, the NC EDSS Project Team feels prepared to critically evaluate the proposals to be received in response to the RFP. Several people who are not involved in the NC EDSS initiative will also serve on the proposal evaluation committee.

If you have any questions or comments, please contact Allison Connolly at 919 715-1642. ▲

Genomics in Epidemiology Symposium Summary

Prepared by Donna Spoon, Genomics Program, Chronic Disease & Injury Section and Carol Dukes-Hamilton, M.D., NC TB Medical Director, General Communicable Disease Control Branch



The Genomics in Epidemiology Symposium sponsored by the NC Task Force on Genomics and Public Health was held on Friday, March 18, 2005, with 100 people in attendance and 89 viewers via satellite locations at Western Carolina University, NC A&T University, UNC-Greensboro Genetic Counseling Program and the Brody School of Medicine at East Carolina University. The daylong conference offered participant's information on the emerging technologies that show most immediate promise to public health practice, and methods epidemiology researchers can use to incorporate genomics into research.

Dr. Muin Khoury, Director of the CDC's Office of Genomics and Disease Prevention was the symposium's keynote speaker. His presentation, "The Impact of Epidemiology on Advancing Genomic Technologies," summarized points in his most recent book *Human Genome Epidemiology* (2004) illustrating applications of epidemiologic methods and approaches to the continuum of genomic information from research to practice. Dr. Khoury emphasized that epidemiology is essential to fulfill the promise of genomics for clinical and public health practice. He noted that epidemiological principles and methods could facilitate gene discovery, characterize how genes are distributed in populations, and how gene-environment interactions influence health outcomes. This will allow the field to evaluate the use of genetic information in treatment and prevention programs. He also noted that genomics enhances the potential for epidemiology to contribute to multidisciplinary scientific research, and that genomic tools will influence epidemiologic study design, analysis, and the drawing of causal inference on "environmental" causes of disease. Dr. Khoury commented that epidemiology and genomics exist in largely separate worlds where different languages are spoken, and stressed the growing need for inter-

(continued on page 9)

(*Genomics in Epidemiology*, continued from page 9)

disciplinary dialogue, training and collaboration. Dr. Khoury's presentation set the stage for the day's eight concurrent sessions, offering participants either "Introductory" or "Research" focused hour-long presentations.

In Session 1 of the Introductory track, Dr. Greg Gibson, Ph.D., Assistant Professor of Quantitative Genomics at North Carolina State University and author of *A Primer of Genome Science*, (revised 2005, Sinauer Associates, Inc.) provided an overview of the field of genome science, its core concepts and methodologies. In the Research session, Dr. Judith Lessler, Ph.D, Vice President, Partnership for Genomics and Molecular Epidemiology at RTI International discussed issues related to developing a program of epidemiological research. She then gave examples from RTI's new study on the innate and adaptive immunity genes associated with response to typhoid and cholera vaccines and their consequent protein expression. In the same session, Dr. Kari North, Ph.D., Assistant Professor of Epidemiology at the University of North Carolina at Chapel Hill described two population based epidemiological studies that have successfully been extended to incorporate genetic information. She described the Strong Heart Family Study that began as a population based study of risk factors for cardiovascular disease (CVD) and has been extended to a family study whose goals are to examine the genetics of CVD risk factors in American Indian families.

Session 2 introduced participants to pharmacogenetics and disease and gene association research methodologies. Dr. Michael Klotsman, Ph.D. is a Medical Genetics Advisor at GlaxoSmithKline, where he designs and assesses observational population and family-based disease association studies in the field of pharmacogenetics. In his Introductory session, Dr. Klotsman introduced participants to the basic conceptual framework and application of pharmacogenetics, the overlap between disease genetics and pharmacogenetics, and the utility of pharmacogenetics towards understanding the way that individuals metabolize drugs. These differences have effects on drug efficacy and drug safety. In the Research session, Dr. Beth Hauser, Ph.D., Associate Research Professor in the Section of Medical Genetics, Department of Medicine and the Department of Biostatistics and Bioinformatics in the Center for Human Genetics at Duke University described current practices in human disease gene mapping, contrasted different study designs, and provided examples of successful disease gene mapping studies. Such practices show great promise in the identification of genes for common diseases such as diabetes, heart disease, asthma and cancer, offering the promise of better understanding of

the biology of these diseases, as well as identifying potential treatment mechanisms.

In the third Introductory session, Dr. Jack Tarleton, Ph.D., Director of the Fullerton Genetics Center in Asheville, NC provided an overview of the current status of genetic testing, using several examples of genetic disorders and the technologies utilized for testing, and compared these to future expectations for genetic testing. He also explained that the expansion and acceptance of adult genetic testing in medical practices has arisen in great part because most chronic diseases are now understood to have some genetic component. In the Research session, Dr. Karen Mohlke, Ph.D., Assistant Professor of Genetics at the University of North Carolina at Chapel Hill shared her six years of experience working on the Finland-United States Investigation of NIDDM Genetics (FUSION) Study, which is identifying genes that influence susceptibility to type 2 diabetes and related traits in the Finnish population. Dr. Mohlke shared linkage methods that have been used to identify several chromosomal regions that may contain genes for Type 2 diabetes, and association methods used to identify particular DNA variants that may influence Type 2 diabetes susceptibility.

In the concluding Introductory session, Dr. Doug Bell, Ph.D., Senior Investigator and Chief of the Environmental Genomics Section at the National Institute of Environmental Health Sciences (NIEHS), Research Triangle Park, NC, and recently elected Chair of the Molecular Epidemiology Group at the American Association of Cancer Research, shared his research findings in gene-environment interactions. Dr. Bell noted that people with specific genotypes might be "high risk" or "low risk" with regard to a particular exposure. He also noted that these genetic markers can be incorporated into epidemiological studies and as the relationship between genotype and risk is elucidated, this information can be utilized in refining human variability parameters in quantitative risk assessments carried out by the National Toxicology Program. In the concluding Research session attendees learned about typical epidemiological methods utilized in pharmacogenetics research, as Dr. Michael Klotsman, Ph.D. at GSK highlighted study design challenges in clinical trials, genetic association studies, and the intersection of clinical trials and genetic studies or pharmacogenetics.

Video-taped sessions of the Plenary and Introductory sessions can be accessed on the Symposium website, by selecting "Research Sessions." PowerPoint presentations are also available. Please visit the website at http://statgen.ncsu.edu/ggibson/nc_gph/index.html.▲

Reported Communicable Disease Cases, N.C., January-March 2005 (by date of report)*

Disease	Year-to-Date (First Quarter)			1 st Quarter 2005	Comments / Notes
	2005	2004	Mean (2000-2004)		
Brucellosis	1	0	0	1	
Campylobacter	171	115	105	171	
Chlamydia, laboratory reports	8702	7203	5798	8702	
Cryptosporidiosis	12	25	12	12	
Dengue	1	1	1	1	
E. coli, Shiga toxin-producing	9	3	7	9	Note 1
Ehrlichiosis, Monocytic	4	3	2	4	
Ehrlichiosis, unspecified	2	-	-	2	Note 2 & 3
Encephalitis, Eastern equine	1	0	0	1	
Foodborne, other	21	16	5	21	
Foodborne, staphylococcal	1	3	2	1	
Gonorrhea	4444	3918	4033	4444	
Haemophilus influenzae	24	12	11	24	
Hepatitis A	24	16	44	24	
Hepatitis B, acute	42	44	52	42	
Hepatitis B, chronic	228	136	161	228	
Hepatitis C, acute	7	3	5	7	
HIV/AIDS	446	476	424	446	Note 4
Legionellosis	7	7	4	7	
Listeriosis	6	4	-	6	Note 5
Lyme disease	14	30	12	14	
Malaria	8	4	4	8	
Meningococcal disease	6	10	17	6	
Meningitis, pneumococcal	11	11	17	11	
Mumps	4	1	1	4	
Rabies, animal	107	149	143	107	
Rocky Mountain Spotted Fever	80	66	30	80	
Salmonellosis	309	192	217	309	
Shigellosis	44	111	101	44	
Strepto. A, invasive	25	34	36	25	
Syphilis, total	97	115	188	97	Note 6
Tuberculosis	37	38	45	37	
Toxic Shock Syndrome (TSS)	1	1	1	1	
Toxoplasmosis, congenital	1	0	0	1	
Typhoid, Acute	1	2	1	1	
Vibrio, other	2	2	2	2	
Whooping cough	21	26	27	21	

*Preliminary data, as of 4/12/2005. Quarters are defined as 13-week periods. Only diseases with cases reported in the year 2005 are listed in the table.

Notes: 1. Including E. coli O157:H7 ("E. coli O157:H7" was disease name until 2/15/2003); 2. Not reportable, or not reportable as such, in this entire time period; 3. Became reportable effective 1/1/2005; 4. Earliest report with HIV infection or AIDS diagnosis; 5. Reportable since 7/2001; 6. Primary, secondary and early latent syphilis.

Employee Recognition:

Denise Lewis

Employee of the Quarter

*Prepared by Patsy West, Administrative Assistant,
Epidemiology Section*



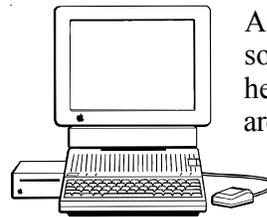
Denise Lewis received the Epidemiology Section's Employee Recognition Award for the first quarter of 2005. Ms. Lewis was nominated in the category of Service Excellence.

Ms. Lewis began her career with the General Communicable Disease Control Branch (GCDC) in December of 1999 and is a valuable member of the GCDC team providing a variety of services to the Branch and local health departments. Ms. Lewis is responsible for processing cases of communicable disease reported by physicians throughout the state in compliance with state statutes and rules. These reports reach the state level after being forwarded by the local health departments. This procedure entails a wide range of related activities, from providing documents used for reporting, to receiving the reports, ensuring their review for quality purposes, entering the data into centralized databases, and reporting feedback to reporters and reviewers. Quarterly, Ms. Lewis prepares a line listing mass mailing which is sent to all local health department communicable disease nurse contacts where the data is used for quality improvement. She also supplies lab reports to local health department communicable disease nurses to assist in local disease investigations.

Ms. Lewis is truly a team player. When a coworker was ill and on medical leave, Denise assumed the responsibilities of her coworker in addition to her own duties. During that period of time, Ms. Lewis trained and supervised a temporary employee and performed the weekly data-send to the Centers for Disease Control and Prevention for the National Notifiable Disease Reports and assisted in transition from paper-based to electronic disease reporting through the National Electronic Disease Surveillance System (NEDSS). Denise is always willing to go the extra mile and pitch in wherever the need is greatest and takes pride in a job well done.

Ms. Lewis will receive a certificate of recognition for her service excellence and a gift certificate to a local restaurant from the Epidemiology Section Management Team. ▲

Online Certificate in Field Epidemiology Available in Fall 2005



As the practice of public health changes, so do the educational needs of public health practitioners, particularly in the area of field epidemiology. According to a survey conducted by the Council of State and Territorial Epidemiologists (CSTE) in November 2001, 42% of epidemiologists working in state and territorial health departments have had no formal training in epidemiology. And many public health employees need to keep working but also want more academic training.

To address this need, an online Certificate in Field Epidemiology has been developed that allows people to attend a top university at a reasonable cost, with twelve academic credits that can be transferred into a graduate program. Courses will be taught completely online by faculty in the Department of Epidemiology at the University of North Carolina's School of Public Health.

Courses will cover concepts and methods of conducting field epidemiology, as well as public health surveillance and infectious disease epidemiology. The first class will begin in fall 2005. Find out more and apply online at <http://www.sph.unc.edu/nciph/fieldepi/>.

“Overall, the course offers a good practical application of the epidemiologic principles for outbreak investigations, and the discussion groups allow for rich dialogue between students with different perspectives—for example, public health professionals practicing in local health departments and academic epidemiologists,” said Emily Sickbert-Bennett, MS, a public health epidemiologist enrolled in a pilot version of EPID 141 is being offered this spring in preparation for the new program.

The online Certificate in Field Epidemiology was developed by the Department of Epidemiology and the North Carolina Center for Public Health Preparedness in the North Carolina Institute for Public Health. ▲

CORRECTION

Please note the following correction to the article on Clandestine Meth Labs published in Volume 2004-4. **Two-hundred and eighty-eight** labs were seized in North Carolina in 2004.

State of North Carolina • Michael F. Easley, Governor
Department of Health and Human Services • Division of Public Health
Epidemiology Section • www.epi.state.nc.us/epi/

Dr. J. Steven Cline, Epidemiology Section Chief
Managing Editor, J. Steven Cline
Layout and Typesetting, Angela Green

Epidemiology Section Office (919) 733-3421
General Communicable Disease Control Branch (919) 733-3419
HIV/STD Prevention and Care Branch (919) 733-7301
Occupational and Environmental Epidemiology Branch (919) 733-3410
State Laboratory of Public Health (919) 733-7834
Rabies Emergency Number - Nights, Weekends, Holidays (919) 733-3419
EMERGENCY NUMBER - Nights, Weekends, Holidays (919) 733-3419

500 copies of this public document were printed at a cost of \$265.17 or \$.53 per copy using non-state funds. 4/05 ♻️