

THE APHL MINUTE

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Laboratory Scientists, Epidemiologists Working Arm-in-Arm To Protect Public Health

Last summer there were 23 documented cases of gastrointestinal illness traced to vacuum-packed steaks contaminated with *E. coli* O157, a particularly virulent form of a common bacterium. What is remarkable about this story, however, is not the two dozen or so known cases, but rather the scores of cases that never materialized.

This particular batch of steaks had been sold door-to-door across a large, multi-state area. And because the steaks came frozen, many were stored in home freezers for future consumption, thus precluding an all-at-once surge in *E. coli* infection that would unquestionably alert health authorities to the problem. With microbes in suspended animation just one step from the dinner table, “several hundred, several thousand people could have been exposed to this contaminated food” over time, said Balasubra Swaminathan, team leader of CDC’s Foodborne and Diarrheal Diseases Laboratory Units. But that never happened.

Tracing a Foodborne Bug

Instead, astute scientists at the Minnesota public health laboratory identified two *E. coli* isolates with identical DNA fingerprints (one sign of a common infection source), and directed this information to state epidemiologists on June 11, 2003. The epidemiologists, in turn, contacted the infected patients and determined that both had eaten vacuum-packed steaks shortly before the onset of symptoms.

“These days we are seeing these types of very diffuse outbreaks,” observed Swaminathan. “One case here, one case there, and they don’t set off the public health alarm.”



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Soon thereafter, the bug’s DNA profile was posted on PulseNet, a database maintained by the CDC to identify clusters of foodborne illness. Minnesota

scientists also searched PulseNet to find out if other states had detected this particular pathogen. Three had: public health laboratories in Michigan, Kansas and Tennessee had each reported a single case of *E. coli* with exactly the same fingerprint. Information from those cases, said Swaminathan, was enough to pinpoint the tainted meat as the source of infection. On June 29, barely two weeks from the start of the outbreak, the US Department of Agriculture (USDA) recalled over 700,000 pounds of the frozen beef.

PRESIDENT'S THOUGHTS

New Membership Structure Positions APHL Beautifully

Dear Members,

The annual meeting was a resounding success! Throughout the week, attendees commented positively on the sessions, the exhibit hall, the social events and the energy created between ASTHO and APHL members. The mobile laboratory parked alongside the hotel attracted a lot of interest from attendees in both groups. We can all feel confident now that our respective ASTHO representatives have heard about PFGE and PulseNet! In the ASTHO sessions I attended I noted a number of laboratory colleagues, and the same was true for ASTHO colleagues attending our sessions. I was also pleased at the solid turnout of 163 APHL members.

One of the most notable events of the week happened early: the passing of the proposed membership structure during the business meeting. The overwhelming support shown by the voting members has ushered in a new and very exciting phase for APHL. The association is now beautifully positioned for future partnerships, growth and the changing realities of the laboratory community.

Giving environmental laboratories a home at APHL is a logical step for us. In my past columns, I have concentrated on the importance of collaboration, partnership and communication in today's emergency preparedness climate. While dollars are squeezed and concepts like chemical terrorism, bioterrorism and infectious disease pandemics are discussed, partnerships with environmental and local public health laboratories need to be *cemented*. There should be solid communication pathways between all of us so that the laboratories can achieve the desired results. One of APHL's key roles is to help foster discourse, to help bring consensus; having the full spectrum of public health and environmental laboratories united behind our name will strengthen our bargaining position nationally in the future.

An additional item to celebrate: the expansion of the Board of Directors to include representation from local and environmental laboratories is going to infuse APHL

with new ideas and energy. The board oversees all major initiatives and directs the association on key issues affecting the membership. The new board positions will ensure that the focus of the board is appropriately balanced across the full scale of our membership.



As much as we have done, there is still more to do to ensure these changes are a success. First, the board will work over the next few months to set an equitable dues structure for the new categories. The board has always had discretion over the dues structure, but will work with the Membership Committee and representatives of the affected member categories. Secondly, APHL will develop a marketing plan to reach out to local laboratories and Associate Institutional members. Finally, since the new categories will be made official at the beginning of the next fiscal year (July 1, 2005), some behind-the-scenes movement will begin in March to prepare for the switch. As necessary, members will be shifted into the new categories to prepare for the dues billing process. Staff will notify all affected members in advance.

Looking forward, I am excited about our future prospects. I believe that this is exactly the right path for APHL and that we will all reap the benefits for having set the groundwork now.

Sincerely,

Paul Kimsey, PhD

EXECUTIVE DIRECTOR'S NOTE

Dynamic New Logo Unveiled



Dear Members,

First, I wish to thank all of you, our partners from CDC, EPA, and other federal agencies, and importantly, the planning committee, for the tremendous success of the co-located 2004 annual meeting. Hats off to the many members who participated in the joint plenary or APHL-organized sessions—presenting, commenting, opining. And also thanks to the many ASTHO members who took time to step into an APHL session or two, spent a social event with a member of the laboratory's leadership, and who learned a bit more about the lab than they knew before. My special thanks to our staff who worked diligently for many months to pull off another spectacular meeting.

A number of key initiatives were voted on and passed at the business meeting, including the proposal to recast our membership categories to more fully engage local public health laboratories, and also to welcome other governmental laboratories that share a common public health mission. These changes to our structure will not be complete overnight—we will take time to hear more from those membership groups so that we can develop and tailor programs and services to them.

We also unveiled a new association logo, part of our continuing effort to improve our public image on behalf of the public health laboratory community. The logo, shown on page 25, conveys movement, which is appropriate for the dynamic, high-tech field of public health laboratory practice and also for its rapidly evolving association. The name of the association forms the base for this design. You may ask, "What about those dots?" The group of dots is intended to be a *non-specific* science reference. It could be populations, data, information, or perhaps the latest shipment of environmental white powders. A number of members commented that for them it evoked a 96 well plate. Our designers determined that the bold sans serif font suggests permanence and assertiveness yet has a

contemporary look. The colors are strong, but not trendy—and therefore won't look dated any time soon. Many thanks to the logo advisory group, which consisted of representatives from APHL constituencies: membership, staff, CDC, a development consultant, as well as other public health organizations. The chosen logo was rated highest by the advisory group out of a field of four based on the descriptors most aptly representative of APHL: professional, science-based, leader, advocate.

At the recent board meeting where this logo was chosen, a board member commented that although we, as scientists, don't often think of image as being overly important, it does matter. And let's not forget that part of our name is the word 'public,' and that's exactly who we need to convince that public health laboratory science and practice are important to their lives—everyday and everywhere.

Sincerely,

Scott Becker, MS

[As we go to press with this issue of the Minute, we have just learned of the national influenza vaccine shortage and the need for stepped-up laboratory surveillance...time to dust off those protocols for review, and be on the lookout for many emails from APHL on this topic.]

“These days we are seeing these types of very diffuse outbreaks,” observed Swaminathan. “One case here, one case there, and they don’t set off the public health alarm. The cluster (that initiated the public health investigation) was only two cases, the minimum number needed to have a cluster.”

Collaboration, Communication Essential

Before PulseNet, such small, scattered outbreaks often went undetected. Ultimately, though, what enabled the system to work was the well-orchestrated collaboration between laboratory scientists and epidemiologists. This collaboration is “*absolutely essential*,” said Swaminathan. “Without that, PulseNet cannot function... One of the major reasons the vacuum-

packaged steaks mystery got resolved so quickly is because the (Minnesota) laboratory did the analysis quickly and the epidemiologist interviewed the cases quickly.”

Contemporary public health scientists have access to an unprecedented array of tools to pit against enigmatic disease agents, from the pulsed field gel electrophoresis technique used to uncover the DNA signature of the *E. coli* to electronic databases like PulseNet that speed and expand the analytic process. Ironically perhaps, the growing quantity and complexity of information available underscores the need for plain, old-fashioned communication—especially between laboratorians and epidemiologists—to steer disease investigations in the right direction and to translate data into policy: in this case, a USDA recall.

More and more, the information provided by epidemiologists informs the work of laboratorians and vice versa. Laboratory results indicated a possible link between two patients infected with *E. coli* but not among others with random *E. coli* infection. Epidemiologic investigations threw suspicion on a particular vacuum-packed steak. Laboratory tests confirmed the presence of *E. coli* in the meat. Thus despite high-tech accoutrements, a simple back-and-forth conversation among scientists is the heart of modern disease surveillance.

In New York City this conversation has been honed through some of the most prominent public health

crises in recent memory. Whether dealing with the first US cases of West Nile virus in 1999, bioterrorism in 2001 or SARS in 2003, Marci Layton, assistant commissioner of the city’s Bureau of Communicable Disease, said “in the midst of an outbreak our job is to make sure the laboratory doesn’t get overwhelmed; to implement an effective surveillance system and appropriately triage potential cases reported by the provider community.” In practice this has meant working with key laboratory contacts to establish specimen collection, packing, shipping, and documentation requirements in anticipation of the specific testing to be done; screening out cases that fail to meet clinical criteria for disease testing; and assuring

a steady flow of information to the laboratory, to the public and to health care providers and patients.

For her part, Sara Beatrice, also an assistant health commissioner and director of New York City’s public health laboratories, said, “Back at the lab we are

dependent on the information (city epidemiologists) provide us to prepare us to staff and optimally test samples that come in as part of an investigation. The lead epidemiologist works one-on-one with the lead laboratory person. It allows it to be very much a team effort.” Beatrice gives her epidemiology colleagues high marks for “optimizing laboratory resources” during past emergencies.

Influenza, A Shared Concern

Today laboratorians and epidemiologists are engaged in yearly efforts to keep one step ahead of evolving influenza strains. Peter Shult, who directs the communicable disease division at Wisconsin’s State Laboratory of Hygiene, explained that influenza viruses are notorious for relatively minor yearly mutations termed *antigenic drift*. The viruses, he said, “are always circulating somewhere in the world and always mutating.” When those mutations occur in viral hemagglutinin, the surface components of the microbe that initiate infection, it can change the organism just enough that the human immune system doesn’t quite recognize it, necessitating an updated vaccine to protect vulnerable populations.

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—Peter Shult

Of even greater public health concern is a more drastic genetic change in the virus, or *antigenic shift*, which occurs over much larger intervals of time. This major change in the influenza virus may result from a fusion of an avian influenza subtype and a current human influenza strain, or from direct adaptation of an avian influenza virus strain to the human population. "When such a new or reassorted virus is introduced into and spreads within the human population, the result is a pandemic or worldwide epidemic," said Shult, with the potential for causing very high morbidity and mortality worldwide. This year there is particular concern about the spread of a novel avian influenza virus, the H5N1 avian influenza virus, also known as bird flu, within the human population.

In Wisconsin, as elsewhere, laboratory scientists and epidemiologists work closely to collect early clues to the nature of the current season's virus. Wisconsin epidemiologists monitor a network of up to 100 sentinel clinicians for signs of an increase in influenza-like illness. A subset of these clinicians sends patient specimens to the state laboratory "so that we can try to isolate whatever viruses or other pathogens are circulating in the population at the time," said Shult. The laboratory also receives year-round data and specimens from a network of ten virology laboratories located throughout the state and from 50 to 60 point-of-care sites that administer rapid influenza tests. The first positive viral isolates are studied in detail at the state level and then sent to the CDC for further analysis and comparison with isolates from other states.

Even as influenza surveillance progresses, Wisconsin's public health scientists are battling another serious problem: a large outbreak of *Bordetella pertussis* or whooping cough that has kept Shult's laboratory running 12 hours a day, 7 days a week. Pertussis has "just exploded statewide," said Shult, who estimated over 1,200 confirmed cases with more expected. Especially while the epidemic is on the upswing, he said, "It's important to get timely lab results so that epidemiologists can identify infected patients and get them treated and limit their exposure to others, thus disrupting the chain of transmission." Shult and his fellow laboratorians have had daily contact with state epidemiologists to review

the course of the outbreak and prioritize disease control efforts. The state's lead epidemiologist co-presented with the laboratory's chief of bacteriology during an audio-conference to all of Wisconsin's clinical laboratories and local health departments. "We do it arm-in-arm," he said.

Biomonitoring, Partnership Equals Interpretable Data

But foodborne and communicable illnesses are not the only population-based ailments whose detection and control depend upon epidemiology-laboratory partnerships. Over the last decade there has been increasing interest in studies to gauge human exposure to environmental toxicants that might impact health. So-called *biomonitoring* studies have focused attention on everything from environmental tobacco smoke to toxic metals like lead and mercury to synthetic compounds including pesticides, dioxins and polychlorinated biphenyls (PCBs).

Carol Rubin, chief of CDC's Health Studies Branch, said the value of biomonitoring data invariably rests on two factors. First, epidemiologists must "choose the right people to collect samples from." For example, in a study of human exposure to aerially sprayed pesticides, she said, "if one were just to go out and randomly collect urine samples, you wouldn't be able to say with certainty that your results accurately represent the entire population of people being sprayed. That's the information you need. It's up to the epidemiologist to know

"We just do a better job when we work together. Both disciplines are stronger and the results of our efforts make for better public health practice."

—Carol Rubin

whether the sample population is representative of the total population (of interest) . . . (based on) statistics, sampling techniques and census information."

Second, laboratory scientists must assure that human specimens are collected and tested appropriately. In an investigation of unusually high levels of childhood leukemia in Fallon, Nevada, Rubin said laboratorians offered guidance on how to design the clinic where blood and urine would be collected from children with leukemia and matched controls "so that there would be absolutely no contamination." She said, "when we reported back the results to these families who were incredibly concerned about their children, we had complete faith in our results." (Data showed elevated

blood levels of tungsten and arsenic, but neither appeared to be associated with the leukemia.)

“Only by (epidemiologists and laboratorians) working together do we end up with information that is truly interpretable,” averred Rubin.

State-of-the-States on Teamwork

Given the importance of lab-epi cooperation, it is fair to ask: How good is the level of cooperation across the country and how can it be strengthened? Stuart Capper, a professor at Tulane University’s public health school, said that during several multi-state research projects, he has found the level of cooperation to be “very good.” However, he also noted that “it can get better.”

“One of the problems that I’ve think we’ve seen,” said Capper, “is that public health professionals know a tremendous amount about what they do and how they do it, but they don’t always know a lot about the pressures and incentives that exist within *other* (public health) professions.”

For example, regulatory, research, and surveillance laboratories may well have different reactions to similar requests from epidemiologists. “Most lab directors have a way of triaging their requests for services,” said Capper. “They generally don’t have the resources to do everything that’s requested of them at the same time, especially if there’s an outbreak going on. They may prioritize their services according to their actual mission. A lab is not a lab is not a lab.”

Capper suggested that public health schools in general can do a better job teaching the practice of public health: “what you need to know to be successful—to get things done—within the context of government service.” He recommended that public health schools bring together multi-disciplinary student teams to simulate how they might practice their professions in a government bureaucracy where the rules for success are not written by the individuals working within the organization, but by economic and political pressures that arise from without.

For those already on-the-job, Capper said improved cooperation can be achieved in part “by epi leaders and lab leaders getting together outside of the context of an outbreak and deciding together what the priorities for epi work and lab analysis should be in different situations.”

Epi-Ready, A Meeting of Minds

The National Environmental Health Association’s *Epi-Ready* training course is one example of a model program that does just that. The CDC-funded course brings together teams of state or local epidemiologists, laboratorians, environmental health specialists, and sanitarians to work through case studies of foodborne disease outbreaks.

Don Sharp, the CDC project officer, said “what we try and do is help everyone feel each other’s pain.” That means helping epidemiologists understand the limitations of laboratory testing: why vomitus is a bad specimen, why second specimens are helpful in some situations, what tests are easy and what tests aren’t. It also means helping laboratorians understand the epidemiologic process and why, for example, all the tools of the trade “may not be enough to sort out the (disease) agent and vehicle before the specimen goes to the lab.”

“...public health professionals know a tremendous amount about what they do and how they do it, but they don’t always know a lot about the pressures and incentives that exist within other (public health) professions.”

—Stuart Capper

In Wisconsin, cross-disciplinary training has been achieved by exchanges of staff liaisons. Moreover, Shult noted that a number of state epidemiologists began their career at the state public health laboratory.

Sharp said the “state-of-the-art (in public health practice) in 2004 is good cooperation.

All this takes is good communication and—what we do in *Epi-Ready*—an understanding of *why* certain requests might be made.”

Echoing this thought, CDC’s Rubin said the key to her team’s smooth working relationship with laboratory scientists is “communication. “We communicate with our lab from the very beginning of any project... We just do a better job when we work together. Both disciplines are stronger and the results of our efforts make for better public health practice.” ■

HHS TO RECOMMEND UNIFORM PANEL OF NEWBORN SCREENING TESTS FOR ALL STATES

Impacts on State Public Health Laboratories Will Vary

Within the next few months, the US Department of Health and Human Services (HHS) is expected to release national guidelines detailing a minimum set of newborn screening tests recommended for inclusion in all state newborn screening programs.

According to Peter Van Dyck, director of the Maternal and Child Health Bureau within the HHS Health Resources and Services Administration (HRSA), a major impetus for the guidelines is the wide disparity in the number of conditions now included in state-mandated newborn screening programs. For example, Kansas, Kentucky and Arkansas test for just four or five conditions each, while Iowa tests for more than 40. Said Van Dyck, “We’re concerned that there is not equity for parents across states, and we feel that we should move in that direction.”

The guidelines will be based in large part on a report prepared for HHS by the American College of Medical

Genetics (ACMG). Although the report is not yet final, the ACMG shared an early draft with the HHS Advisory Committee on Heritable Disorders & Genetic Diseases in Newborns & Children, which voted on September 23 to “accept and recommend” its conclusions.

condition panel were the availability of a reasonably accurate test to detect the condition and an efficacious therapy to treat it. However, he noted that the criteria were “not entirely objective.” For example, the study’s authors considered such questions as “How easy is it to provide a (therapeutic) diet to a baby with PKU?”

Watson also noted that the ACMG considered two alternate recommendations for the core panel: “to argue that (government) mandated newborn screening is the only way or to say that . . . it should be the standard of care that all babies be screened, basically putting responsibility on the pediatrician. “We opted for the first choice,” he said.

The 25 *report only* conditions—including hemoglobin variants, argininemia, malonic acidemia, galactokinase deficiency and MCKAT, to name a few—are conditions that are generally detected as part of the differential diagnosis of disorders in the core panel, but ranked

low in the ACMG scoring process because they have poorly understood natural histories, currently have no treatments and/or are relatively benign. The ACMG recommends that these

“We’re concerned that there is not equity for parents across states, and we feel that we should move in that direction.”

—Peter Van Dyck

secondary findings be reported to parents and healthcare providers, but, said Watson, “We don’t presume the state to be obligated to really monitor these patients long-term.”

Twenty-nine additional conditions—including insulin-dependent diabetes mellitus, fragile X syndrome, creatine transport defect and lysosomal storage diseases—were not indicated for newborn screening as reliable tests are not currently available. Newborn screening recommendations for three infectious diseases—HIV, toxoplasmosis and cytomegalovirus—were deferred.

The Process

The ACMG study group considered 84 congenital conditions and, based on scientific data and expert opinions from a range of newborn screening stakeholders, classified them into three categories:

1. Conditions recommended for state-mandated screening, reporting, and follow-up (the *uniform condition panel*).
2. Secondary *report only* conditions.
3. Conditions not indicated for newborn screening at this time.

ACMG Executive Director Michael Watson said that the primary considerations for placement in the uniform

Reaction to the ACMG Report

George Cunningham, who oversees California’s newborn screening program, lauded many aspects of the ACMG report. The study group, he said, “made a pretty reasonable case” for all of the conditions in the core group. Moreover, he found the model decision matrix included in the report to be “very useful” for

states as they consider expanding the core panel as new testing technologies become available. Cunningham said the proposed standards to evaluate the quality of newborn screening programs should be implemented nationally “so we’re comparing apples to apples (across states).”

But Cunningham objected to the scoring system used to rank conditions, finding it “arbitrary and somewhat subjective.” He said, “States should not accept the scoring system as the final arbiter of what they should add to their screening programs.” He also disagreed with the designation of *report only* conditions. “All of those conditions,” he said, “need to be followed up, and states need to collect and pool data nationally. If you find something in your screening, you have to follow up on the few you find.”

Cunningham said the standard in California is that “anything we report, we follow up.” The state has 14 metabolic centers where families are referred for confirmatory tests, diagnosis and treatment of rare infant disorders, and relevant case data is reported back to the newborn screening program.

A basic, unresolved issue that goes beyond the ACMG report, said Cunningham, is how to count newborn

screening services from educating parents to assuring access to biochemical geneticists and other medical specialists.

William Becker, medical director of the Ohio State Department of Health and a member of the genetics committee, noted in an email that state responses to final HHS recommendations “will vary from the need for legislation enacted to consideration of a fee structure (or modification of an existing fee) to (changes in) the panel of disorders screened to the practice patterns of diagnosis and follow up to issues of monitoring, quality assurance and quality improvement.”

Specific impacts on public health laboratories—which oversee all current public newborn screening programs in the United States and perform the vast majority of the testing—will depend on the extent to which states expand their screening panels in response to national guidelines. Harry Hannon, chief of CDC’s Newborn Screening Branch, said that one concern is the need for public health laboratories to acquire expensive new technologies, such as tandem mass spectrometry, to enable them to perform many of the tests recommended by the ACMG. Even though some authorities advocate regional models in which states with

low birth counts share testing resources, Hannon said a state’s natural inclination is to be self-sufficient. “Do you have to have a car or can you take the bus?” he asked rhetorically.

“I’m a firm supporter that every baby should have access to testing for everything that’s available.”

—Harry Hannon

screening tests to enable objective cross-state comparisons. For example, phenylketonuria can be considered one condition or as many as seven, involving different tests, different prognoses and different treatments. “We need professional agreement,” he stated.

What Impact Will This Have?

Before HHS releases final recommendations, Van Dyck said the agency will consider the input of its genetics committee, state maternal and child health programs, professional associations (including APHL), public health laboratory directors and others. He noted that HHS has “no authority to demand that states comply with whatever recommendations we come out with,” but that the agency will offer whatever technical assistance it can to facilitate compliance. Earlier this year, HHS funded seven regional newborn screening centers to share best practices among states and develop regional strategies to optimize the full gamut of newborn

Resources Necessary to Expand Screening Programs

Other concerns are the need for additional staff training and perhaps even additional staff members to handle an increased test load. “No resources are available to enable all states to comply with the (ACMG) recommendations,” said Cunningham. Currently, 45 states charge fees to cover the laboratory costs associated with newborn screening. But fees may be insufficient to support greatly expanded screening programs and are not always fully covered by private health insurance or Medicaid.

APHL, CDC, HRSA, and the National Newborn Screening and Genetics Resource Center co-sponsor newborn screening training programs for laboratory scientists through the National Laboratory Training Network and at Duke University’s Biomedical Center

and the Baylor Medical University's Institute of Metabolic Disease. APHL also co-sponsors the Newborn Screening Quality Assurance Program (NSQAP), which assesses testing proficiency in state newborn screening laboratories. Hannon said the NSQAP is hampered by the lack of commercially available chemicals to use for quality control and proficiency testing purposes for some of the conditions on the proposed uniform screening panel; LCHAD, for example. Lacking actual biomarkers of interest, the program uses markers that closely resemble those biomarkers so that the NSQAP can conduct proficiency testing for the full range of disorders for which states might screen.

Despite concerns about resources, however, all of those interviewed for this article viewed expanded screening favorably. CDC's Hannon, for example, said, "I'm a firm supporter that every baby should have access to testing for everything that's available (meeting criteria)."

California has already passed legislation that will enable the state's newborn screening program to begin a tandem mass spectrometry program sometime next summer. "At that time," said Cunningham, "we will be screening for most of those 29 conditions (on the proposed core panel) and will add others soon after," including many not on the list.

The March of Dimes, an influential infant health advocacy group whose president serves on the HHS genetics committee, has revised its newborn screening policy to include all of the disorders listed in the ACMG report's core panel and will base its periodic evaluation of states' newborn screening performance on at least those conditions. The group's associate medical director, Siobhan Dolan, said that "families have had tragic experiences feeling the inequities of the (current newborn screening) system." All children, she said "should benefit from the wonderful possibilities inherent in newborn screening." The group will work through its local chapters to stimulate public advocacy to bring state policies into accord with national March of Dimes recommendations.

In the meantime, the HHS genetics committee has met only twice. "The committee's work is just beginning," said Becker. Future recommendations will likely deal with funding issues as well as consideration of a national newborn screening process. Becker noted that experts predict the technology to screen for many genetic disorders is "just over the horizon." This tough issue," he said "will need much more discussion." ■

**UNIFORM CONDITION PANEL
RECOMMENDED BY AMERICAN COLLEGE
OF MEDICAL GENETICS**

October 2004

Organic Acid Disorders

- Beta-Ketothiolase deficiency
- Glutaric acidemia type I
- 3-hydroxy 3-methyl glutaric aciduria
- Isovaleric acidemia
- 3-Methylcrotonyl-CoA carboxylase deficiency
- Methylmalonic acidemia, (Cbl A, Cbl B)
- Methylmalonic acidemia, (mutase)
- Multiple carboxylase deficiency
- Propionic acidemia

Fatty Acid Oxidation Disorders

- Carnitine uptake defect
- Long-chain 3-OH acyl-CoA dehydrogenase deficiency
- Medium-chain acyl-CoA dehydrogenase deficiency
- Trifunctional protein deficiency
- Very-long-chain acyl-CoA dehydrogenase deficiency

Amino Acid Disorders

- Argininosuccinic acidemia
- Citrullinemia
- Homocystinuria
- Maple syrup (urine) disease
- Phenylketonuria
- Tyrosinemia type I

Hemoglobin Disorders

- Hb S/Beta-thalassemia
- Hb S/C disease
- Hb S/S disease (Sickle Cell Anemia)

Others

- Biotinidase deficiency
- Congenital adrenal hyperplasia
- Congenital hypothyroidism
- Cystic fibrosis
- Galactosemia
- Hearing deficiency

[Glucose-6-phosphate dehydrogenase deficiency was originally included on this core list, but was dropped after additional evidence was examined.]

*Profiles in Public Health Laboratories Series***MARION COUNTY LABORATORY: NEW ROLES SINCE 9/11, BUT NO NEW \$ TO MATCH****DIRECTOR**

Matthew Matusiak, PhD, a medical technologist/microbiologist by training, who assumed the directorship of Marion County Public Health Laboratories in 2001. Matusiak is an auxiliary member of the United States Coast Guard and is active in both APHL (serving on the Knowledge Management Committee) and the American Public Health Association.

LOCATION

“That’s actually hard to say.” Matusiak oversees 26 satellite laboratories in addition to the main facility in downtown Indianapolis. The satellites—mostly in patient care settings—include hemoglobin laboratories at every county WIC site, several STD laboratories, school-based clinic laboratories, and a laboratory at the Action Center, a freestanding adolescent health clinic.

FACILITY

The main laboratory takes up the basement of the Marion County Health Department.

“If I put any more equipment in here, we’re going to be in trouble. Like every other public health laboratory, we need to upgrade and expand. But with local tax dollars (providing virtually all of the laboratory’s funding) it’s not going to happen with today’s economy.” In the meantime, the view from Matusiak’s window is a cinderblock wall.

STAFF

20 permanent staff, plus a pool of temporary staff that fluctuates from 0 to 20 individuals.

“We shrink or expand depending on health department needs. For example, we have used temps to complete lead testing.”

RELATIONSHIP TO THE STATE LABORATORY

No regulatory oversight from the state public health laboratory. The Marion County Health Department Public Health Laboratory does back up the Indiana State Health Department Laboratory in times of high volume.

DISTINGUISHING CHARACTERISTICS

- ◆ The only county laboratory represented on APHL’s laboratory information management systems (LIMS) requirements project.
- ◆ Certified by the American Industrial Hygiene Association (AIHA) to do asbestos testing, inorganic testing and environmental lead testing.
- ◆ The only laboratory in the state that performs drug resistance testing for *Neisseria gonorrhoeae*. (An aggressive testing program helped Marion County

avert the upsurge in drug-resistant *Neisseria* plaguing other big cities in the region.)

- ◆ Until recently, the only laboratory in the state certified to perform environmental lead testing.
- ◆ Part of the Indiana Healthcare Information Exchange network.
- ◆ Virginia A. Caine, MD, director, Marion County Health Department, is the American Public Health Association president.

HIGHEST VOLUME TESTING

Roughly a third of the laboratory’s clinical testing is STD screening, meaning gonorrhea, chlamydia, and syphilis. Another third is blood lead testing in children. The highest volume environmental service is testing for fecal coliforms and other contamination in streams, pools, reservoirs and environmental lead testing.

NOTABLE SUCCESS STORIES

Working with local health officials to reduce the county’s syphilis rate from the highest in the nation in 1999 to “normal” levels three years later.

Becoming “an educational leader for our hospitals and our physicians” after a piece of sorting equipment in the Marion County postal repair facility tested positive for anthrax in 2001. (The equipment had come from the contaminated Brentwood Post Office outside of Washington, DC.) The incident “put us in the limelight . . . which was new for us, ‘cause we’re kind of introverted; we don’t get out of the laboratory much.” County laboratorians continue to serve as an educational resource for clinicians and clinical laboratories, addressing new health threats such as monkeypox and West Nile virus.

BIGGEST CHALLENGE

“Keeping the doors open. Indianapolis is actually the 12th largest city in the US based on population size. One of our biggest challenges is that people don’t consider us a major metropolitan area. We really don’t get any federal funding—less than ten percent of our budget. We’re a local tax-based operation, which puts us into a bind when the tax base changes every now and again.”

VACANCIES

0. “Many city hospital labs are merging, so they’re getting rid of excess techs. The shortage of (laboratory) workers here is not as great as what LA or Chicago or other big cities might have.”

GOALS

- ◆ Become-LRN certified in some capacity.
- ◆ Become AIHA-certified for food testing.
- ◆ Get out of the basement.



ENVIRONMENTAL HEALTH

APHL's Biomonitoring Advocacy Efforts Gain Momentum

Aggressive, Comprehensive Approach to Propel State Biomonitoring Programs

When it comes to advocacy efforts to promote funding for state biomonitoring programs, APHL's environmental health program has adopted a "full speed ahead" approach.

Biomonitoring is the measurement of chemicals or their metabolites observed in human clinical samples, namely blood, urine, and/or saliva. Over the past three years, APHL worked closely with the CDC's National Center for Environmental Health (NCEH) Division of Laboratory Sciences (DLS) to launch a planning grant program to support biomonitoring capacity-building for state public health laboratories. This program resulted in the distribution of \$5 million to 25 applicants, several of which represented multi-state consortia. In January 2003, APHL, in partnership with CDC, organized a 50-state biomonitoring meeting to provide an opportunity for state and national biomonitoring programs to present updates on activities.

Although the substantial funding received from the CDC afforded most states the means necessary to plan core biomonitoring programs, additional resources are crucial for states to succeed in executing and expanding those plans. Furthermore, states that have yet to initiate biomonitoring programs are in dire need of funding. This past year, a mere three grantees received about three million dollars to implement their biomonitoring plans: New York, New Hampshire and the Rocky Mountain Consortium (AZ, CO, MT, NM, UT, WY).

In May 2004, to bolster an effort for increased funding, APHL published and released a report, "Biomonitoring: Measuring Chemicals in People." APHL members used an early version of the report to educate members of Congress and their staff on Hill Day in March. The intention of this report was to underscore the importance of biomonitoring, which the CDC has employed for over 25 years to protect the health of the public, as well as to promote the need for building biomonitoring capacity at the state level. The report also details which states presently have access to CDC biomonitoring funding, and predicts that some of these states will implement programs if the much-needed additional funding were made available.

Following the release of the report, APHL issued an "action alert" to encourage its members to contact Congress about making available \$58 million in the FY05 Labor, Health and Human Services, and Education Appropriation Bill for the CDC/NCEH. This funding, which represents a \$20 million increase from FY04, would allow states to:

- ◆ develop biomonitoring plans, if the need remains.
- ◆ implement plans already developed.
- ◆ acquire the necessary equipment and personnel.
- ◆ receive training from NCEH on current biomonitoring methods.
- ◆ utilize high-tech methods in investigations of unusual occurrences of diseases.
- ◆ conduct epidemiologic studies of the impacts of various exposures.
- ◆ respond directly to chemical emergencies and determine who has been exposed.

Although the report and ensuing action alert have been valuable tools for raising awareness, they are only two pieces of the larger biomonitoring advocacy plan. APHL contracted with the National Conference of State Legislators (NCSL) to begin educating state legislators about biomonitoring; a meeting of laboratorians and legislators took place at the Minnesota state public health laboratory in July. Additionally, APHL organized and hosted a briefing by Dr. Eric Sampson, CDC/NCEH, an expert in biomonitoring. Various environment and health-related organizations, associations, and non-profit groups were invited to attend, in an effort to garner community support for increased federal funding for biomonitoring. Attendees included representatives from organizations such as:

- ◆ Association of State and Territorial Health Officials
- ◆ American Lung Association
- ◆ Tobacco-Free Kids
- ◆ Trust for America's Health
- ◆ Association of Occupational and Environmental Clinics
- ◆ Association of Schools of Public Health
- ◆ March of Dimes
- ◆ Environmental Health Research Foundation
- ◆ National Breast Cancer Coalition

- ◆ Environmental Defense
- ◆ Environmental Council of the States

Sampson's presentation included specific anecdotal examples and biomonitoring success stories, such as reduced blood/lead levels in children resulting from the ban of lead paint and leaded gasoline products, and important health associations made between exposure to tobacco smoke and blood/cotinine levels in humans. Participants received various biomonitoring-related materials, such as a copy of APHL's report, "Biomonitoring: Measuring Chemicals in People," and CDC/NCEH's "Second National Report on Human Exposure to Environmental Chemicals." In order to involve and establish connections with government entities, APHL and CDC/NCEH are currently planning a similar briefing geared more towards federal, state, and local governing bodies and organizations.

In coordination with these efforts, the National Laboratory Training Network (NLTN) has established unique training programs to support biomonitoring capability in the laboratory. On September 15, 2004, the NLTN and the Massachusetts Department of Public Health State Laboratory Institute co-sponsored a full-day biomonitoring program, "Biomonitoring: The Challenges of Human Exposure Assessment." The program attracted 65 people from New England states and focused on topics such as: 1. Growing capacity and capability for biomonitoring at state and national laboratories; 2. Technical challenges faced in implementing a biomonitoring program; 3. Benefits through collaboration with environmental health tracking, environmental monitoring, and biomonitoring; and 4. Use of biomonitoring to enhance assessment of human exposure to specific environmental contaminants. The course was well received, and the NLTN and partners from the Massachusetts Department of Public Health Bureau of Laboratories and Environmental Science are discussing the potential expansion of this program into larger regional meetings to take place next year.

APHL plans to continue this aggressive, comprehensive approach for promoting state biomonitoring programs with the ultimate goal of enabling states to implement such programs throughout the nation. ■

FOOD SAFETY

Strengths and Gaps of State Food Safety Programs Identified

In the three years since APHL conducted a comprehensive survey of state public health laboratories to quantify and compare the existing and ideal food safety laboratory capacity of state labs, the World Trade Center and anthrax attacks in the fall of 2001 thrust emergency preparedness into the spotlight. With these issues receiving increased public scrutiny, APHL administered a follow-up survey in July 2004 to measure the current food safety capacity and capability of 56 state and territorial public health laboratories, with particular emphasis on daily operations and surge situations. Thanks to the outstanding cooperation, 48 states, 1 territory, and the District of Columbia replied, for an overall response of 89%.

The 2004 follow-up survey was drafted to be more specific and focused than its predecessor, targeting areas of crucial need and seeking measurable and usable data. The Food Safety Survey Workgroup, consisting of federal agency liaisons and APHL members and staff, worked hard to provide a survey of reasonable length that still provided useful information about significant gaps in food safety capacity and capability. The data collected were used to create a 4-page issue brief, "State Public Health Laboratory Food Safety Capacity." The brief serves as a tool for state laboratories to highlight the glaring need for increased and sustainable funding for both day-to-day operations and surge capacity.

The data reveal that the capacity and capability of state public health laboratories has improved since 2001, but is by no means optimal. Although laboratories have been investing in facilities, equipment and critical infrastructure, progress is still needed. Ninety-eight percent of states possessed the minimum molecular diagnostic equipment recommended by APHL for food testing; however, only 29% had the minimum recommended food chemistry equipment. One hundred percent of respondents met the APHL recommendation of having a secure area, but only between 72% and 78% had additional security features such as electronic access to track entry and exit into the secure area, a login area for receipt and logging of samples, and a back-up power supply.

Maintaining sufficient personnel remains a problem, and while many states plan for the surge in testing that would

accompany a food event by training staff for a variety of food-related testing, the average laboratory would be able to provide fewer than two additional, full-time staff trained to perform food testing. Many states continue to be unprepared for the additional workload that would accompany a food emergency requiring laboratory testing.

Although the efforts of states to bring their food safety laboratory capacity in line with earlier recommendations has yielded tangible results, APHL hopes to use the issue brief to bring additional attention to the critical needs of laboratories faced with daily operational requirements that will continue to increase, and emergency preparedness needs that still remain unmet. The issue brief, "State Public Health Laboratory Food Safety Capacity," is available electronically at

www.aphl.org/Environmental_Health/index.cfm#fs. For more information, or to request a hard copy, contact Jeremy Gillissen, APHL's food safety program manager at 202.822.5227 ext. 245 or jgillissen@aphl.org. ■

POLICY

Federal Appropriations On Hold

Congress adjourned until November without coming to agreement on the fiscal year 2005 appropriations for CDC and the other components of the Department of Health and Human Services. The bill that provides this funding, the Labor, HHS and Education appropriations measure, passed the House on September 9 by a strong margin of 388 to 13. The Senate appropriations committee passed its version of the bill on September 15, but the full Senate has yet to act on it.

Absent an appropriations bill that has been signed into law, Congress agreed to a continuing resolution that extends the fiscal year 2004 funding for CDC and several other federal departments and agencies so they remain operational until November 20. At this writing, it is unclear what action Congress will take when it returns in November. It is possible that the Labor, HHS and Education bill could become law. But it seems more likely that a bill that provides funding for these agencies for the remainder of fiscal year 2005 (through September 30) will be bundled together with funding for other agencies.

Highlights of the details of the House and Senate bills include: a House cut of \$101 million in CDC funding which causes reductions in the Public Health and Health Services Block Grant of \$23 million and in the Public Health Improvement account of \$44 million; a Senate increase of funding for the CDC of \$228 million provided by a budgetary measure which evoked strong opposition from the administration; House and Senate rejection of the administration's request to reduce funding for state and local emergency preparedness by \$105 million; a House increase of \$2 million in the Environmental Health Laboratory account, with \$770,000 specifically targeted to biomonitoring; and language that supports biomonitoring in the Senate bill. Both bills increase funding to the Public Health and Social Services Emergency Fund, the House by \$130 million and the Senate by \$165 million, with \$872 million directed to state and local health departments. ■

Did you know...?

A Glance at the Numbers

Food Safety Follow-up Survey

In July 2004, APHL launched a survey of 56 state and territorial public health laboratories in order to ascertain what critical gaps remain in food safety capacity and capability, following its July 2001 Food Safety Survey in which half of states showed basic food chemistry capability. Fifty responses (48 states, 1 territory, and the District of Columbia) were received, for an overall response rate of 89%.

50

74% | **Seventy-four percent** of states lack a written plan for coordinating with non-governmental laboratories.

Non-governmental laboratories, including clinical and hospital labs, are crucial for the detection and collection of isolates during a food emergency. In an intentional event, such isolates will have forensic value.

98% | **Ninety-eight percent** of states have the minimum molecular diagnostic equipment recommended by APHL in its 2003 report, *A Recipe for Stronger Food Safety Programs*.

29% | **Twenty-nine percent** of states have the minimum equipment APHL recommends for food chemistry testing.

PULSENET

Discounted Prices for PulseNet Laboratories

Cambrex, formerly BioWhittaker Molecular Applications, the manufacturer and vendor of SeaKem Gold agarose (SKG), has agreed to continue providing a special discount on SKG, TBE buffer, and GelStar stain to PulseNet participating laboratories in the US. To obtain the discount, the purchasing agent must provide the Quote Number (#LEC12). The new quote is valid through June 1, 2005. PulseNet Canada laboratories should inquire with their local Cambrex sales representatives about the special offer (mention quote number stated above). Email Dr. Efrain Ribot, ERibot@cdc.gov, should you have any problems obtaining the discount for the items covered on the quote.

Second PulseNet Area Meeting Creates Ideas and Builds Epi-Lab Relationships

The Northeast Area PulseNet Meeting was held June 22-23, 2004, in Boston, MA. Hosted by the Massachusetts Pulsed Field Gel Electrophoresis (PFGE) Lab and the National Laboratory Training Network (NLTN), the meeting provided an important opportunity for lab directors and supervisors, epidemiologists and laboratorians from the Massachusetts PulseNet area, the CDC and APHL to interact and discuss opportunities to enhance PulseNet. The agenda purposefully encouraged multidisciplinary discussions on improving foodborne disease surveillance in the northeast, and nationwide. Individual state presentations provided an opportunity for all to hear the challenges faced by colleagues, as well as to learn about the successful components of the many different systems. Participants gained a better understanding of the enormous diversity in PulseNet activities in each state. Small group breakout sessions challenged the group to identify the strengths and weakness within individual PulseNet programs and to discuss how successful elements could be translated to other states.

Most participants reported a need for improvements with epi-lab relations at the state or national level. Collaborative solutions at the state level include: creating a shared cluster database available to lab and epi staff; using existing tools, such as weekly reports, and including both lab and epi data; seeking IT support; developing communication strategies at the state level; developing epi-lab working groups; and providing Lab 101 and Epi 101 trainings, orientations and shadowing.

To improve the function and utility of PulseNet at the regional and national level, the following actions were recommended: designating PulseNet epidemiologist(s) in each state; combining Epi-X listings with corresponding WebBoard postings; providing and defining epi privileges and responsibilities for PFGE data; having epidemiologists participate in PulseNet Area conference calls; and having CDC provide a template for how to share data between epi and lab programs.

Other improvements discussed by the participants included the development of useable cluster definitions, coordinated use of the WebBoard, improved isolate and case report submission, standardization of epidemiology tools, streamlined PulseNet proficiency testing, and a national public relations campaign to build support among state funders for the PulseNet network. Based on the key findings from the discussion sessions, participants from each state devised an action plan specifically tailored to address the most important issues in their state. The action items outlined immediate steps to be taken, and again involved the laboratorians, epidemiologists and laboratory directors or supervisors.

With the assistance of the staff of the Minnesota Department of Public Health, APHL intends to co-organize similar area meetings across the PulseNet network in the coming year.

PulseNet Proficiency Testing Results

The third PulseNet proficiency testing survey was completed in the spring of 2004. The submitted results were analyzed and graded by APHL contractor Christine Steward, and the final scores were approved by staff at the CDC. Of 36 laboratories completing the *E. coli* survey, 33 received passing scores. Of 30 laboratories completing the *Salmonella* survey, 28 received passing scores. All 9 laboratories that completed the *Listeria* survey received passing scores. Those laboratories that did not pass the third proficiency test survey for a particular organism have the opportunity to participate in the fourth survey, which is currently ongoing. Should a laboratory fail two consecutive surveys, it is necessary to apply for recertification to maintain access to the online national database. Results from the fourth PulseNet proficiency testing survey for *E. coli*, *Salmonella*, and *Listeria* will be available in January 2005. Later in 2005, CDC may be able to offer proficiency testing for *Shigella* and *Campylobacter* for those laboratories that have received certification for these organisms. For assistance in obtaining PulseNet certification sets, contact Kelley Hise at the CDC, khise@cdc.gov. ■

PulseNet Exhibit Unveiled at CDC's Global Health Odyssey Museum

Interactive Exhibit Highlights Successes of International System

The success of PulseNet, a surveillance system for early detection and investigation of foodborne disease outbreaks, was immortalized recently at the CDC's Global Health Odyssey museum in Atlanta. An interactive exhibit on the project was unveiled during a ceremonial opening on October 5, 2004. Two speakers preceded the ribbon-cutting: Balasubra Swaminathan, chief of the Foodborne and Diarrheal Diseases Laboratory, and Tanja Popovic, the acting associate director for Science, Office of Science Policy and Technology Transfer.

Swaminathan's leadership and advocacy are credited with fueling the creation and ultimate success of PulseNet. Now an international system, PulseNet has set an example within the scientific community, demonstrating the value of collaboration, creativity and cross-cutting work. Speaking at the exhibit opening, Swaminathan thanked others who worked with the project over the years. Their assistance enabled PulseNet to grow from its modest beginning into a system that can handle the "more than 30,000 DNA fingerprints received last year."

Popovic recalled that when Swaminathan asked to begin this project, collecting isolates and doing the fingerprinting was a "new idea—a very original way of thinking." And then, she remarked, he took it a step further and proposed working with APHL and sharing the data among state public health laboratories. This innovative cooperation was key to the success of PulseNet. And partnerships have extended further than just between the CDC and APHL. Swaminathan remarked, "PulseNet has (also) catalyzed close working relationships between epidemiologists and laboratorians at the national, state and local levels."

Popovic pointed out that exhibits like this one are very important because they convey to the public how many people have been helped by the technology, how many people have not gotten sick. Also, she said, this helps ensure that young people understand that scientists in public health have very unique careers. Public health scientists have superior technical skills, but their work is not esoteric: they are able to see their positive effect on an ongoing, measurable basis in the health of the public.

And finally, the exhibit is special because young people can interact with it and see that science can be exciting and interesting. Public health scientists are not "bespectacled, hidden away in a lab and out of touch with reality."

The PulseNet Exhibit

The PulseNet exhibit is the result of collaboration at the CDC between the National Center for Infectious Diseases' Foodborne and Diarrheal Disease Laboratory team and the Office of Communication's Global Health Odyssey. The exhibit panels walk the visitor through four foodborne outbreaks, explaining the roles of the health care provider, laboratorian and epidemiologist. Actual lab equipment is displayed with a video showing work in the PulseNet lab, and visitors are asked to match some sets of DNA fingerprints. Huge posters of

PulseNet's 'Least Wanted' display information about these bad bacteria in foodborne outbreaks: *Campylobacter jejuni*, *Salmonella*, *Escherichia coli* 0157:H7, *Listeria monocytogenes* and *Shigella*. A separate PulseNet laboratory interactive, using a plasma screen, was designed by the Center for Technology in Teaching and Learning at Rice University. Visitors enter the virtual lab, and participate in all the steps as they solve the fingerprint mystery.



(l to r) Swaminathan, Popovic, and Scott Becker, at the PulseNet Odyssey Opening.

Global Health Odyssey Museum

The Global Health Odyssey Museum is an interactive educational facility designed to teach about the CDC, public health and the benefits of prevention. Its outreach efforts are part of the CDC's drive to offer credible health information to the public and to work with community partners to prevent health problems. The museum provides guided tours, which include not only a description of the exhibits and the CDC's work, but also lectures, presentations, videos and educational activities in the Discovery Theater. About 15,000 people visit every year.

The Global Health Odyssey also manages a speakers' bureau, matching requests for CDC speakers with 160 volunteers. Approximately 150 requests are fulfilled each year, with topics ranging from adolescent health to virology. To learn more about the CDC's Global Health Odyssey, visit www.cdc.gov/global/. ■

HIV

FDA Approves New HIV Tests

HIV diagnostic testing is continually evolving as manufacturers develop screening assays that are better able to detect HIV infection. The evolution of these tests has progressed into new advancements in HIV screening. Until now, assays containing the Group M antigen were capable of detecting the majority of HIV infections in the US. In response to Food and Drug Administration (FDA) requirements, manufacturers have developed new screening assays with a consensus Group O antigen in addition to the Group M antigen. Manufacturers expect that the addition of the new Group O antigen will help detect HIV infection in certain unique individuals who do not test preliminary positive with the current screening assays that only contain the Group M antigen. The new assays should also demonstrate improved sensitivity.

The BioMerieux Vironostika HIV-1 Microelisa System and BioRad Genetic Systems HIV 1/HIV-2 Peptide enzyme immunoassay (EIA) are being replaced with new assays that contain both the Group M and Group O antigens. BioRad's new Genetic Systems HIV-1/HIV-2 Plus O EIA has now replaced the earlier Genetic Systems assay and is currently available for public health laboratories to perform validation studies. The BioMerieux Vironostika HIV-1 Plus O Microelisa System has been approved by the FDA and is expected to be commercially available shortly. Laboratories currently using these assays should contact the manufacturer to discuss options for change and plans to maintain supplies.

Once both of the new screening assays are available, APHL and the CDC will work through the APHL/CDC HIV Steering Committee to compile data from validation studies of these new tests performed by the public health laboratories. The CDC is also conducting analyses of the sensitivity of these and other FDA-approved HIV antibody tests, including rapid tests, for detecting antibody during seroconversion. An in-depth analysis and summary will be provided to the membership once these studies are complete.

CDC Sponsors HIV Conference

In light of the availability of new enzyme immunoassays (EIA), three FDA-approved rapid HIV antibody tests, and other diagnostic approaches including nucleic acid amplification testing (NAAT), experts agree it is essential to reevaluate options for the confirmation of HIV. The

CDC seeks to encourage public health and clinical input at a conference, "HIV Diagnostics: New Developments and Challenges," to be held February 28-March 1, 2005, at the Grosvenor Resort in Orlando, FL. The HIV Diagnostics Conference precedes the APHL Infectious Disease Conference, to be held March 2-5, 2005, at the same location.

Topics for the diagnostics conference include: current trends in HIV-1/HIV-2 EIA testing (including the new FDA-approved assays); rapid HIV testing implementation and quality assurance; options for confirmatory testing in different settings; screening for acute HIV infection with nucleic acid amplification tests (NAAT); the use of dried blood spots for RNA testing and for quality assurance; and an update on HIV-1 incidence surveillance.

APHL is co-sponsoring this meeting; Drs. Barbara Werner (MA), Jane Getchell (DE), and Sally Liska (San Francisco, CA) serve on the planning committee. A call for abstracts and official meeting announcements will be released shortly. APHL will provide the membership with further details as they become available. If there are any questions or comments, contact Anthony Tran, HIV, STD, TB program manager, at atran@aphl.org or 202.822.5227 ext. 229. ■

The Nebraska Public Health Integration and Exchange of Laboratory Data Project

The Public Health Integration and Exchange of Laboratory Data (PHIELD) project is a cost-effective solution to facilitate the secure integration and exchange of laboratory data of public health significance among trading partner lab systems, including NEDSS, using a PHIN-compliant HL7 message format. Structured as a simple, open source solution deployed locally within a lab, the Phield system streamlines the ability to collect, filter and apply standard coding such as LOINC and SNOMED to lab data. Additionally, the system enables the secure bidirectional transmission and receipt of lab data among local and remote lab systems.

Developed in conjunction with the Nebraska public health laboratory, the University of Nebraska Medical Center and the Nebraska Health and Human Services System, project members are seeking additional sites interested in contributing to the project by partnering on implementations of the PHIELD Project within their labs. Visit the project Web site at www.phield.org or contact John Glock, PHIELD Project Manager, at jglock@unmc.edu.

CHLAMYDIA

The Infertility Prevention Project:

A National Collaboration Against Chlamydia

Chlamydia is the most common and treatable bacterial sexually transmitted disease in the United States, affecting an estimated 3-4 million people annually. Conservative estimates indicate that 1 in every 20 sexually active women of childbearing age and 1 in every 10 adolescent girls are infected with chlamydia. Most chlamydia infections in women (70-80%) and men (30-40%) produce no symptoms. Complications of untreated infections in women include pelvic inflammatory disease (PID), ectopic pregnancy, and tubal blockage causing infertility. Without adequate treatment, approximately 20-50% of women infected with chlamydia will develop PID. Among women with PID, inflammation and scarring will cause approximately 20% to become infertile, 6-9% to develop potentially fatal ectopic pregnancies with certain fetal demise, and 18% will suffer chronic and debilitating pelvic pain. Costs associated with chlamydia infections are estimated to exceed \$2.4 billion/year. An estimated 80% of the costs associated with chlamydia are attributed to treatment of infections and related complications. Every dollar spent on early detection can save an estimated \$12 in complication-associated costs.

The Infertility Prevention Project (IPP), also known as the Chlamydia Project, is a nationwide collaboration between the CDC and the Office of Population Affairs (OPA) to prevent and control chlamydia and its resulting health complications. Funded through the CDC, the IPP began in 1988 as a demonstration project in Alaska, Oregon, Idaho and Washington. By 1995, the project had expanded and encompassed the entire nation.

The purpose of the IPP is “to implement effective prevention strategies designed to reduce the debilitating complications, including infertility, that are caused by *Chlamydia trachomatis* infection in the United States.” To accomplish this goal, the IPP requires partnerships at the regional level between sexually transmitted disease programs, family planning, and public health laboratories. To further facilitate these partnerships, the CDC has funded regional infertility prevention advisory committees (infrastructure) which set regional priorities, establish regional screening and treatment guidelines, and link surveillance and epidemiological activities. In addition, the CDC provides support to the Association of Public Health Laboratories for the

national chlamydia program manager position held by Dr. Richard Steece. Steece represents APHL with the CDC IPP and actively participates in all activities related to laboratory screening for the project.

The public health laboratories’ provision of diagnostic support is critical to this project. The laboratories test approximately 6 million specimens annually for chlamydia, resulting in an estimated saving of over \$500 million in associated healthcare costs by reducing the cases of pelvic inflammatory disease, ectopic pregnancy and infertility in the United States.

In addition to the routine screening, public health laboratories actively pursue epidemiological and surveillance activities—working intimately with other established city, county and state programs. A recent example is the Chlamydia Awareness Campaign initiated in Region IV (AL, FL, GA, KY, MS, NC, SC, and TN). The Chlamydia Awareness Campaign began as a pilot project in 2003 with chlamydia screening projects in six colleges and universities in Georgia. In the spring of 2004, this project was expanded to all eight states in Region IV, including over 20 colleges, universities and youth screening sites. APHL’s Steece worked directly with diagnostic manufacturers to donate over \$30,000 in screening reagents to assist the region with this project. While the results for 2004 are still being analyzed, over 400 specimens were tested in the 2003 campaign in Georgia, with a positivity rate from 6.2% to 26.3%. Of the specimens screened, 62% were from females with 30 positives detected; 15 cases of pelvic inflammatory disease (PID) were averted in a population that was unaware of the infection.

For further information, contact Dr. Richard Steece at rsteece@aphl.org or 605.224.9240. ■

EMERGENCY PREPAREDNESS

First National Congress on Public Health Readiness Holds Conference:

Mobilizing Public Health and Healthcare Leaders

On July 20-22, the CDC, in partnership with the American Medical Association (AMA), hosted the First National Congress on Public Health Readiness: *Mobilizing Public Health and Healthcare Leaders for Community Action*. APHL, along with other organizations cosponsored this conference, which was held in DC and attracted hundreds of thought leaders and decision makers from medicine, public health and academia. APHL staff and members attended the conference: James Pearson, Norman Crouch, Mary Gilchrist, Sally Beatrice, Victor Waddell, Katherine Kelley, Frances Downes, Anthony Sambol, Scott Becker, Chris Mangal and Lauren DiSano.

Main Goals of the Conference

- ◆ Strengthen linkages between health care and public health leaders to enhance preparedness.
- ◆ Share experiences that demonstrate successful community readiness for terrorism, response to naturally occurring health threats, and interventions addressing critical healthcare and public health challenges.
- ◆ Develop and strengthen working relationships within the public health system.
- ◆ Review new scientific advancements, identify controversies and recommend action steps to face the threats and challenges of the twenty-first century.

From the meeting proceedings, conference organizers plan to compile and publish a history of successful interventions that have improved community readiness for public health threats.

Presentations

Julie L. Gerberding, MD, MPH, director of the CDC, delivered the opening plenary. Gerberding briefly discussed the CDC's reorganization and new overarching health protection goals: (1) preparedness: people in all communities will be protected from infectious, environmental and terrorist threats and (2) health promotion and prevention of disease, injury, and disability: all people will achieve their optimal lifespan with the best possible quality of health in every stage of life. Gerberding stated that public health preparedness is a continuous process of improving the health system's capacity to detect, respond to, recover from, and mitigate the consequences of terrorism and other health

emergencies. She also discussed the various surveillance systems: BioWatch, BioShield and BioSense.

Following Gerberding's opening remarks, the president of the AMA, John C. Nelson, MD, MPH, discussed the role of physicians and the AMA in preparedness. Several panel discussions were organized so that participants had an opportunity to share experiences and strengthen working relationships.

Conference presentations focused on state of the science lectures: diagnostic methods and informatics, defining readiness-measuring preparedness, training the workforce-responding to new expectations of performance, global response-strategies for protection of borders and points of entry, and many other preparedness issues.

Laboratory Focus

APHL member James Pearson, DrPH, BCLD, director, Virginia Division of Consolidated Laboratory Services, Virginia State Laboratory, and Charles A. Schable, MS, director, Office of Terrorism Preparedness and Emergency Response, CDC, co-facilitated a session, "Complexities of New Detection Technologies-Careful Application to Practice."

Speakers included:

Eddy Bresnitz, MD, MS, state epidemiologist/senior assistant commissioner, New Jersey Department of Health and Human Services

Norman Crouch, PhD, director, Minnesota Public Health Laboratory and chair, APHL Emergency Preparedness and Response Committee

Richard Meyer, PhD, MS, chief, Rapid Response Advanced Technology Lab, Bioterrorism Response and Preparedness Program, National Center for Infectious Diseases, CDC

Tracee Treadwell, DVM, MPH, chief, Epidemiology Response Branch, Bioterrorism Response and Preparedness Program, National Center for Infectious Diseases, CDC

The speakers addressed the use of detection technologies, appropriate interpretation of results and provided examples of communities with coordinated response plans.

There were also several discussions on the Laboratory Response Network (LRN) and the role of public health laboratories. Currently, the LRN includes state and local public health, veterinary, food, military and international laboratories. The LRN laboratories continue to play a major role in detecting and responding to potential terrorism activities.

APHL members and staff will continue to participate in policy and laboratory preparedness discussions at a national level. For more information on current APHL preparedness activities, contact Ms. Rosemary Humes, rhumes@aphl.org, or Ms. Chris Mangal, cmangal@aphl.org.

Conference Materials

To purchase cassette tapes or audio CDs from the conference, go to www.firsttape.com or contact First Tape Inc., 815.389.1818 or firsttapeinc@aol.com. Presentations from select speakers, including Julie Gerberding, are available at www.bt.cdc.gov/training/ncphr/.

Subcommittee to Assess Surge Capacity in LRN Labs

Complex Issue at Crux of Laboratory Readiness

Surge capacity is a complex issue, but one that invariably arises in the context of laboratory readiness.

How much testing can public health labs do?

Staff at public health laboratories, APHL and CDC are repeatedly pressed for an answer to some version of this question. However, surge capacity definitions and needs may differ from state to state, depending on population size, potential risks and many other factors. Without a standard definition of surge capacity, it is almost impossible to answer this question.

APHL's Emergency Preparedness & Response Committee (EPR) members have made surge capacity a priority, recognizing that the demand for laboratory analyses has increased steadily with the proliferation of emergency response networks and biosurveillance systems. Many of these new programs rely on the Laboratory Response Network (LRN) infrastructure to meet the testing demands. The Office of Terrorism Preparedness and Emergency Response and the Bioterrorism Preparedness and Response Program at CDC have also indicated that defining and assessing surge capacity is essential in order to make the case for the continued development of the LRN, and to make critical projections about the quantity of reagents needed to support the network and costs associated with developing a national LRN reagent stockpile.

For these reasons APHL convened the Surge Capacity Subcommittee, chaired by Dr. Sally Beatrice. The subcommittee met in August 2004 and drafted working definitions of capacity and began developing a tool to assess surge capacity with the LRN.

Standing Capacity

The *total* volume of a specific type of testing that a laboratory can perform with few or no operational changes; that is, within normal hours of operation, using existing staff, and without curtailing other routine laboratory activities.

Excess Capacity

A subset of *standing capacity*. The *additional* volume of testing that a laboratory can perform (above and beyond what it might already do) with few or no operational changes; that is, routine absorbable capacity. *Excess capacity* is usually employed during short-term, planned events, such as a major political conference, sporting event or a small-scale suspicious event.

Surge Capacity

The volume of a specific type of testing that a laboratory can perform in an **emergency** situation, with substantial operational changes and using all resources available.

Surge needs are often agent-specific and require the right facilities, equipment, validated and standardized methods, adequate reagents, and trained personnel. The subcommittee also defined potential rate limiting factors that will impact each laboratory's surge capacity. In addition to facilities, equipment and staff, rate limiting factors include the complexity of the sample matrix and the intake capacity of the laboratory.

On September 29, 2004, at the APHL/ASTHO co-located annual meeting, subcommittee member Bonnie Rubin provided a summary of the surge capacity assessment efforts. The audience provided valuable

feedback, which will be incorporated in this process. One of the next steps for the subcommittee is the development of an assessment tool that would be useful in estimating the surge capacity of LRN laboratories. The tool will be piloted to five to ten state public health laboratories and revised based on feedback from these sites. Once the tool has been finalized, it will be used to assess surge capacity in LRN public health laboratories.

For more information on APHL's Surge Capacity Subcommittee or Emergency Preparedness & Response Committee activities, contact Ms. Chris Mangal at cmangal@aphl.org or 202.822.5227 ext. 244. ■

Surge Capacity Subcommittee Members

Sally Beatrice, PhD, Assistant Commissioner, Public Health Laboratories, New York City Department of Health and Mental Hygiene

Rahsann Drumgoole, MS, Bioterrorism Investigator, Bureau of Laboratories, Texas Department of Health

Julianne Nassif, MS, Director, Environmental Chemistry Laboratory, Massachusetts State Public Health Laboratory

Bonnie Rubin, MBA, MHA, Bioterrorism Response Coordinator, University of Iowa Hygienic Laboratory

Dean Willis, DrPH, Director of Infectious Disease and Clinical Services, Bureau of Laboratories, Florida Department of Health

Daniel Sosin, MD, MPH, FACP, Captain, US Public Health Service, Associate Director for Science, Office of Terrorism Preparedness and Emergency Response, CDC

Janet Nicholson, PhD, Associate Director for Laboratory Science, National Center for Infectious Diseases, CDC

Michael Miller, PhD, Chief, Laboratory Response Branch, Bioterrorism Preparedness and Response Program, CDC

Richard Kellogg, MS, Coordinator, Laboratory Response Network, Laboratory Response Branch, Bioterrorism Preparedness and Response Program, CDC

Bob Kobelski, PhD, Research Chemist, National Center for Environmental Health, CDC

Rosemary Humes, MS, MT(ASCP)SM, Director, Infectious Diseases and Preparedness, APHL

Chris Mangal, MPH, Emergency Preparedness and Response Program Manager, APHL.

FELLOWSHIPS

APHL Initiates Tenth Class of EID Fellows

APHL initiated the tenth class of EID laboratory fellows in August, following an orientation program at the CDC in Atlanta. This year's class includes 26 pre-doctoral training fellows, eleven post-doctoral research fellows and six international fellows.

Half of the US-citizen fellows will be hosted by APHL-member local and state laboratories, including:

Arkansas Department of Health

California Department of Health Services

Colorado Department of Public Health and Environment

Connecticut Department of Public Health Laboratory

Delaware Public Health Laboratory

Florida Department of Health (Miami and Tampa laboratories)

Massachusetts Department of Public Health

Michigan Department of Community Health

New Jersey State Public Health and Environmental Laboratories

Texas Department of Health

University of **Iowa** Hygienic Laboratory

Virginia Division of Consolidated Laboratory Services

Washington State Public Health Laboratory

Wisconsin State Laboratory of Hygiene

Fellows will also be placed in CDC laboratories in Fort Collins, Colorado, and Atlanta, Georgia.

Fellows began their one- and two-year assignments in September. APHL looks forward to working with these fellows, their mentors and host laboratories over the coming year.



Class X EID Fellows at the August orientation program at CDC.

Fellows Participate in Outbreak and Epi Investigations

Ryan Novak, a fellow in the CDC's Division of Bacterial and Mycotic Diseases, participated in a Leptospirosis outbreak investigation in western Kenya in August. While there, Ryan helped identify risk factors associated with the outbreak, investigated potential animal reservoirs for leptospirosis and possible routes of transmission to humans, collected and processed blood samples, and assessed local laboratory capacity for surveillance. Novak also co-authored an article in the August *Journal of Clinical Microbiology*, "Use of 16S rRNA gene sequencing for rapid confirmatory identification of *Brucella* isolates."

As part of his fellowship assignment, **James Amburgey** developed an ultrafiltration-based extraction method for waterborne disease outbreaks. His method was put to use during a multi-pathogen outbreak of *Giardia* and *Cryptosporidium* in Ohio. Amburgey works in the CDC's Division of Parasitic Diseases.

Lloyd Reitz and **Heather Masri** worked on an epidemiological study of low-dose exposure to uranium in drinking water in two housing subdivisions in Virginia. They established the sampling and testing protocols in the investigation and coordinated sample handling and analysis. Reitz and Masri work in the Virginia Division of Consolidated Laboratory Services.

APHL Places Environmental Health Fellows in State Laboratories

APHL and NCEH/CDC are pleased to announce the placement of two postdoctoral fellows in the new Environmental Health Fellowship Program. The Wisconsin State Laboratory of Hygiene recruited a fellow to participate in advanced trace element studies and other environmental microbiology testing. The Alaska State Public Health Laboratories recruited an analytical chemist to develop expertise in the analysis of heavy metals in human tissue samples. APHL looks forward to working with these fellows and their host laboratories.

For more information or application materials for the Environmental Health Traineeship or Fellowship programs, contact Heather Roney, fellowship program manager, at hroney@aphl.org.

Fellow Activities and Publications

Two former EID fellows published an article in the August 2004 *Journal of Clinical Microbiology*. **Josh Courtney** and **Leah Kostelnik** co-authored "Multiplex Real-Time PCR for Detection of *Anaplasma phagocytophilum* and *Borrelia burgdorferi*." Both Courtney and Kostelnik worked in the CDC's Division of Viral and Rickettsial Diseases.

Joan Kenney presented a poster at the November American Molecular Pathology meeting in Los Angeles. "Multiplex PCR Panel for Detection of Vector-Borne Agents" was also published in the *Journal of Molecular Diagnostics*. Kenney is a fellow at the New Mexico Department of Health.

EID fellow **Mary Kate Yost-Daljev** assisted APHL staff with the July NLTN course, "Public Health Food Microbiology." She gave a presentation and instructed a hands-on lab exercise on *Listeria monocytogenes* detection. Yost-Daljev is a current fellow at the Virginia Division of Consolidated Laboratory Services.

Bulent Taysi presented a poster, "A Single Base Chain Extension Dependent, Microsphere-Based, Flow Cytometric Assay for Detection of Point Mutations in Hepatitis B Virus," at the September 2004 European Congress of Virology in Madrid, Spain. Taysi was an international EID fellow who recently completed his fellowship in the CDC's Division of Viral Hepatitis.

International fellow **Yuping Ran** presented the poster, "Ultrastructural analysis of two morphotypes of *Penicillium marneffeii* that differ in virulence," at the October 2004 Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) meeting in Washington, DC. Ran recently completed his fellowship in the CDC's Division of Bacterial and Mycotic Diseases.

Laura Gillim-Ross, a fellow at the New York State Department of Health, is sharing her fellowship research and experience with students at the University of Albany. She recently gave a lecture based on her SARS research to graduate-level classes in infectious diseases and virology.

International fellow **Shuming Zhao** co-authored a poster to be presented at the October American Association of Blood Banks (AABB) meeting in Baltimore. The poster, "Prevention and reduction of febrile nonhemolytic transfusion reaction by leucocyte

filtration blood transfusion” is based on his work in the CDC’s Division of Viral Hepatitis.

Alejandro Castello presented a poster at the July 2004 American Society for Virology meeting in Montreal, Canada, “Rotavirus G and P Genotype Prevalence in Argentina 1999-2003: Detection of P[9]G12 Strains.” Castello’s research in the CDC’s Division of Viral and Rickettsial Diseases compares Argentinian rotavirus strains with Asian and US G12 strains. Castello’s research includes collaboration with health care workers, hospitals and university staff in his home laboratory in Argentina.

2005 EID Fellowship Deadline

The application deadline for local, state and federal public health laboratories interested in hosting a fellow for the 2005 EID Laboratory Fellowship Program is March 1, 2005. The application deadline for prospective fellows is February 18, 2005. For more information, contact Heather Roney, fellowship program manager, at hroney@aphl.org.

EID Fellows’ Research Takes Them Overseas

Juliet Bryant spent three weeks in Hanoi, Vietnam in July and August 2004. She performed mosquito trapping in areas with high levels of unexplained encephalitis and isolated unknown arboviruses. She also provided training to staff of the Entomology Laboratory of the National Institute of Hygiene and Epidemiology (NIHE) in molecular techniques to identify *Culex* mosquito vectors of Japanese encephalitis and other arboviruses. Bryant works at the CDC’s Division of Vector-Borne Infectious Diseases.

Expanding on her research in the CDC’s Division of Parasitic Diseases, **Meghan Pearce** spent the month of September in Guatemala City, Guatemala at the CDC Medical Entomology Research and Training Unit (MERTU). She assisted with research projects involving the identification of malaria and Chagas Disease vectors, and in optimization of a PCR-based assay to test for chloroquine resistance in the malaria parasite *Plasmodium falciparum*. ■

NLTN

Bloodborne Parasite Training

CDC experts from the National Center for Infectious Diseases Division of Parasitic Diseases collaborated with the Boston NLTN office on two 2-day laboratory courses focused on the diagnosis of malaria and babesiosis. Over 45 laboratorians received hands-on training. The August course in Durham, NH, attracted participants from throughout New England and as far west as Missouri. On September 25, public health and private sector microbiologists attended a repeat of the course in Baltimore, MD.



Students completed a pre-test consisting of 10 peripheral blood films. They were asked to identify the genus, species and life cycle stage. Melanie Moser, CDC, then demonstrated DPDx, a Web site developed and maintained by CDC’s Division of Parasitic Diseases. She showed how DPDx can be used for reference and training. She also described real-time diagnostic assistance, facilitated by transmission of digital images to CDC for consultation. Currently, only state and county public health labs are equipped to transmit digital images via DPDx.

Students were given the opportunity to prepare, stain and evaluate blood smears. CDC staff Stephanie Johnston and Henry Bishop described key features of red blood cells infected with *Plasmodium* species and *Babesia microti*. Students examined individual slide sets containing examples of each species. Alex Da Silva and Marianna Wilson, also of the CDC, lectured on the use of molecular techniques and serology to complement traditional microscopic methods.

Several students submitted case studies for class discussion, and a post-test was administered at the end of the course. In addition to prepared slides and lecture handouts, each student received the second edition of “Bench aids for the diagnosis of malaria infections,” a World Health Organization publication. As workforce demographics change, laboratory diagnosis of malaria and babesia will continue to challenge those working in both public health and clinical laboratories. This course provided a rare opportunity for hands-on training, as well as information about Web-based CDC resources.

The National Laboratory Training Network: *Fifteen Years Fantastic!*

“Quality Laboratory Practice Through Continuing Education” is the vision of the National Laboratory Training Network (NLTN). In 1989, this same vision prompted a handful of public health laboratory directors and CDC laboratory scientists to create the NLTN. That year, a mere fifty-three laboratory training courses were offered by seven regional offices. Today, fifteen years later, the vision has grown into a dynamic cooperative training program offering a variety of continuing education options and resources, for both public health and clinical laboratorians.

Celebrating Success

On September 21-23, 2004, NLTN staff gathered at the APHL headquarters in Washington, DC, for a staff meeting and, more importantly, to celebrate the fifteenth anniversary of the network. Over the years, almost 120,000 students have been trained in 3,000 events. Bobbi Albert, manager of the Nashville office, and Valerie Johnson, CDC training advisor at the Chicago office, received awards for staffing the NLTN throughout its fifteen years. “It’s been very challenging to work in an organization dealing with laboratory public health issues that are constantly evolving, as well as having seen the impact of technology on training over the past fifteen years,” reflected Valerie Johnson after the celebration. ■

A Few Highlights from the First 15 Years

Regional, multi-day, hands-on workshops for public health laboratories: this type of training has addressed topics like rabies, foodborne illness and molecular techniques, and has reached almost 400 public health laboratorians from every state, the District of Columbia and Puerto Rico.

Public Health Teleconference Series: these audio-conferences are specifically designed by and for the public health laboratory community, and have hosted 5,500 public health laboratorians. This resource is archived for public use on the NLTN Web site.

A free online lending library: 1,000 laboratory scientists utilize this service each year.

National laboratory training conferences: meetings which link laboratory state training coordinators from all over the nation.

Sentinel laboratory bioterrorism training: these events were initiated in 1999 as awareness training, and have since expanded to include wet workshops. 7,000 public health and clinical laboratorians have been trained to date.

City of Houston Employment Opportunities

Laboratory Supervisor

To supervise all phases of the daily laboratory operations within a specific unit or section. The Laboratory Supervisor's position is vacant in the following sections: Medical Microbiology, Hematology, Virology/Serology, Molecular Diagnostics and Analytical Chemistry. There are a total of five (5) positions.

Requires a Bachelor's degree in a Biological Science or Chemistry with five (5) years of relevant professional experience in a Public Health or Clinical laboratory.

Microbiologist IV

To take the lead in Bio-terrorism response testing, includes food safety testing; assist with the establishment of new test systems; develop and write laboratory protocols; assist in provision of rapid laboratory response to Bio-terrorism and infectious outbreaks.

Requires a Bachelor's degree in Molecular Biology, Bacteriology or Biology and four (4) years of relevant professional experience.

For more information and to apply for this position, log on to
www.cityofhouston.gov

Or call Maria Gomez, Senior Human Resources Specialist
at 713-558-2471, maria.gomez3@cityofhouston.net

City of Houston

Highlights from the

APHL 2004 Annual Meeting

Award Winners At A Glance

Gold Standard for Public Health Laboratory Excellence Award

The award is given to an APHL member who makes or has made significant contributions to the advancement of public health laboratory science and/or practice.

RONALD H. LAESSIG, PhD

DIRECTOR, WISCONSIN STATE LABORATORY OF HYGIENE

While director of Wisconsin's public health laboratory, Laessig has been a professor of preventive medicine and pathology, and also of laboratory medicine, at the University of Wisconsin for more than 25 years. He has served on more than fifty academic, state and national committees or boards and has published more than 200 scientific publications. As chair of APHL's Environmental Health Committee, Laessig was enormously influential in the association's work on chemical terrorism.

On the Front Line Award

APHL's On the Front Line award honors an individual or organization outside of the association's membership who makes significant contributions to APHL, its membership and mission

BALASUBRA SWAMINATHAN, PhD

CHIEF, FOODBORNE AND DIARRHEAL DISEASE LABORATORY
CDC/NCID

Swaminathan, chief of the CDC's Foodborne and Diarrheal Disease Laboratory, spearheaded the enormous success of PulseNet. This unique surveillance system is widely recognized for its early detection, rapid investigation, and effective intervention to control local, state, national, and even international outbreaks of foodborne disease. Due to his dedication, many outbreaks have been detected, countless cases of foodborne illness have been averted, lives have been saved and high costs of medical care have been avoided.

Lifetime Achievement Award

The Lifetime Achievement Award recognizes individuals who have established a history of distinguished service to APHL, made significant contributions to the advancement of public health laboratory science or practice, exhibited leadership in the field of public health and/or positively influenced public health policy on a national or global level.

GEORGE ANDERSON, DVM, MPH

Anderson combined his education in veterinary medicine and public health to create a long and successful career serving the public. After his formal education, he worked at the Ohio public health laboratory where he quickly became the chief of the virology section, and then ultimately the laboratory supervisor for virology and communicable disease research.

In 1961, Anderson moved to the Michigan public health laboratory, serving as chief of the viral vaccines unit, where he expanded his work on rabies' vaccines. In 1976, he became the director of the Michigan laboratory. His considerable leadership skills and ability to grasp the larger view of issues led him to work on many national committees and organizations. In 1981, he was elected as APHL president.

Anderson's numerous publications in peer-reviewed scientific journals, diverse academic and research interests, national leadership roles, and continued involvement in scientific practice make him an ideal recipient of APHL's *Lifetime Achievement Award*.



Anderson (l), with William Hausler (c), and Paul Kimsey (r), upon receiving the award.

Recipients of APHL's Lifetime Achievement Award

2004 | GEORGE ANDERSON, DVM, MPH

2003 | E. CHARLES HARTWIG, ScD

2002 | J. MEHSEN JOSEPH, PhD

2000 | ARTHUR F. DiSALVO, MD

1999 | STANLEY L. INHORN, MD

1998 | CARL H. BLANK, DRPH

1998 | WILLIAM J. HAUSLER, PhD

Recent Board Actions

APHL's Board of Directors met briefly before the 2004 annual meeting in St. Paul to discuss issues surrounding Biowatch, changes to the select agent program at the CDC, preparedness, the efforts of the Surge Capacity Subcommittee, the organizational changes at the CDC and other topics. Recent actions taken by the board include approval of:

- ◆ A new logo for the association
- ◆ The 2005 budget
- ◆ A fundraising policy for the association
- ◆ A plan to increase corporate member dues to boost fundraising efforts
- ◆ The 2003 business meeting minutes



Trovato and Crouch pose with award.

Recent Actions Taken by the Voting Members

The 2004 business meeting occurred on September 28, before the official opening of the annual meeting in St. Paul, MN. The gavel was passed from past president Norman Crouch to Paul Kimsey, and each committee chair reported on the year's events. The members heard a report from Jim Pearson in his new role as preparedness liaison, and also heard from



ASTHO president Dr. Richard A. Raymond confers with CDC director Dr. Julie Gerberding, before she speaks at the closing plenary.

Eric Blank who represents APHL on the Association of State and Territorial Health Officials (ASTHO) Management Committee. The membership voted to approve a number of bylaws changes necessary to adopt the new membership structure and likewise voted to amend the Articles of Incorporation to make them consistent with the changes to the bylaws.

If you would like a copy of the minutes for either of these meetings, contact Shawna A. Webster at swebster@aphl.org or 202.822.5227 ext. 225.

APHL's Board of Directors Approves New Logo

At the 2004 business meeting, the board of directors chose this design, one of two prepared for them by Barbieri and Green of Washington, DC. Many thanks to the logo advisory group,



APHL ASSOCIATION OF
PUBLIC HEALTH LABORATORIES

representing APHL membership and staff, CDC, a development expert, and communications experts from other public health organizations. This logo was rated highest by the advisory group based on the descriptors most aptly representative of APHL: professional, science-based, leader, advocate. For more on the logo decision, please see the *Executive Director's Note* on page 3.

2004 APHL Award Recipients

Gavel Award

Norman Crouch, PhD

Gold Standard for Public Health Laboratory Excellence

Ronald Laessig, PhD

Lifetime Achievement Award

George Anderson, DVM, MPH

On the Front Line

Balasubra Swaminathan, PhD

Presidential Award

E. Ramona Trovato
Environmental Protection Agency

Service to the Board of Directors

William Becker, DO
Member-at-Large 2001-2004

Service as Committee Chair

James Pearson, DrPH, BCLD
Emergency Preparedness and Response Committee
2001-2004

Ralph Timperi, MPH
Global Health Committee
2000-2004

Ronald Laessig, PhD
Environmental Health Committee
2000-2004

Veronica Malmberg, MS
Food Safety Committee
2003-2004

Burton Wilcke, PhD
Leadership Committee
2001-2004

Thomas Maxson Award

Vickie G. Whitaker, BSMT
Laboratory Improvement Coordinator
North Carolina State Laboratory of Public Health

MEMBER NEWS

Pennsylvania Bureau of Laboratories Heads Close-knit Laboratory Community

Pennsylvania is a land of contrasts. Philadelphia—site of both the Continental Congress that issued the Declaration of Independence and the Federal Constitutional Convention that produced the US Constitution—was once the largest English-speaking city in the world next to London. Although it long ago ceded its political prominence, it is still the hub of a busy metropolitan area. A concentration of medical experts in the city draws so many families seeking diagnosis of certain infant disorders that Pennsylvania reports the second highest rate of infant botulism in the nation.

At the other end of the spectrum, the commonwealth is home to probably the largest concentration of Amish residents in the United States. Bruce Kleger, director of the Pennsylvania Bureau of Laboratories, noted that, because they do not adopt many contemporary medical practices, “the Amish have diseases that other people don’t have anymore.” For example, Pennsylvania’s Amish community experienced the last outbreak of polio in the US in 1969 and has suffered rubella outbreaks since then.

Similarly, large tracts of forest and farmland have made rabies a recurring problem, especially afflicting wild raccoons and barnyard cats.

Under Kleger’s direction the state public health laboratory deals with all of these problems and more. In fact, Kleger is aware of most public health problems that arise since the entire commonwealth is served by just three public health laboratories: local laboratories in Philadelphia and Pittsburgh and the state laboratory, situated in an industrial park near the Pennsylvania Turnpike, about 30 miles west of Philadelphia and 75 miles east of Harrisburg.

Moreover, as possibly the first state to institute its own laboratory licensure program, Pennsylvania began

building a statewide laboratory network long before talk of a *national laboratory system* was in vogue. “We probably do more laboratory licensure than most states,” said Kleger, noting that the state laboratory has more than 8,000 sites under license, including the two local public health laboratories, private hospital and physician laboratories, and sites that solely administer rapid HIV antibody tests. Each year state laboratory staff inspect a subset of licensed sites. “In the beginning, the physician office laboratories were pretty poor,” said Kleger, but as a result of ongoing education and training the quality of laboratory services is now much improved.

Although the Bureau of Laboratories has no supervisory authority over the Pittsburgh and Philadelphia public health laboratories, the three have historically enjoyed a close relationship. Kleger recently served on the interview team that vetted candidates to manage the Philadelphia laboratory, and he hopes to establish a formal arrangement with both laboratories for surge capacity in the near future.



Anthony Watson, currently of the Pennsylvania Bureau of Laboratories, performing toxicology testing.

Unlike some state public health laboratories, the commonwealth’s Bureau of Laboratories performs all manner of testing—food, animal, environmental and human—provided there is a clinical connection. The only routine public health testing *not* performed at the state laboratory is newborn screening. In what Kleger calls an “unusual procedure” whose origin predates his directorship, two contract laboratories process these infant tests while the state laboratory provides quality assurance oversight. The arrangement, said Kleger, “could be better,” and officials are mulling plans to improve quality compliance and efficiency.

At the height of the summer, the laboratory responded to a multi-state outbreak of salmonella in which several hundred people became ill. Epidemiologists traced the

source of the outbreak to tomatoes that were served on sandwiches at a chain of gasoline station convenience stores. Kleger, whose staff performed the salmonella isolation and speciation, said the outbreak was unusual in that more than one serotype was involved. Although health authorities identified the tomato vendor, the hurricane season disrupted attempts to pinpoint the out-of-state farm where the tomatoes were grown.

As this article is being written, the laboratory is focused on West Nile virus. The state Department of Environmental Protection collects and sorts mosquitoes, the Department of Agriculture collects and packages dead birds, and the laboratory tests the entire lot. Soon, Kleger said, staff will switch gears and ramp up influenza activities.

Of course, said Kleger, biological and chemical terrorism are always “major concerns.” The Bureau of Laboratories has about 2,000 square feet of Biological Safety Level-3 space and participates in the federal Biowatch program, covering southeastern Pennsylvania and southern New Jersey. Biowatch testing, he said, is “going well except for the funding; there isn’t any.”

Other laboratory services include lead testing in children and environmental samples and drug and alcohol testing of people killed in traffic accidents. Results of the post-mortem traffic-related tests are reported to the Pennsylvania coroner’s office, the state Department of Transportation (which uses the data in its application for federal highway safety funds) and the state health agency (which uses the data to “get out messages about drinking and using drugs and driving”).

Each year the Bureau of Laboratories serves underinsured Pennsylvania residents one-on-one with a booth at the commonwealth’s annual farm show in Harrisburg where staff perform rapid screens for elevated glucose, cholesterol and prostate specific antigen. On-site counselors interpret the test results and copies are sent to individuals’ physicians. Staff perform the same chronic disease screens for homeless veterans each spring as part of StandDown, a Philadelphia-based event sponsored by the US Army. In this case, military physicians, dentists, and podiatrists are available to treat veterans on-site.

Kleger, who has worked at the Bureau of Laboratories in various capacities for 39 years, is hopeful about its future. He pointed out that since 1992 his staff has grown from 67 individuals to 87, with new federal funding fueling much of the growth. Thanks to favorable state laws, the laboratory is exempt from a general government hiring-freeze. And, as it has its own line-item in the state budget, the bureau has enjoyed relatively stable funding. Kleger calls the appropriations situation “a wonderful arrangement in that the other

parts of the health department can’t take our money.” Indeed, while many other state public health laboratories have suffered budget cuts, the Pennsylvania laboratory has experienced a modest two to three percent annual increase for the past few years.

If Kleger has any complaints at all they relate to a national shortage of qualified laboratory scientists that is protracting recruitment of scientists to fill about half a dozen

vacancies. And, oh yeah, he could use a good DNA sequencer. ■



Edward Pugh, performing organic chemical analysis (as noted in the original caption) circa 1927.



Pennsylvania Bureau of Laboratories, circa 1945

Photos courtesy of Pennsylvania Bureau of Laboratories.

STAFF NEWS

Rachel Collins, program manager for APHL's National Center for Public Health Laboratory Leadership, has resigned her position citing personal reasons. The association wishes her well.

Doug Drabkowski, a thirteen-year APHL veteran, accepted a position with VirtualAlert as the Biowatch project manager for laboratory operations, effective September 7, 2004. Drabkowski will focus on Biowatch laboratory management, support and operations, and will work closely with the Department of Homeland Security and other federal and state partners. In his years at APHL, Drabkowski was involved in numerous projects which shaped the growth of the association, including the development of a global health program, the creation of a fellowship program, the initiation of an online survey instrument, support for the development of the "Core Functions of State Public Health Laboratories" document, and promotion of the concept of a National Laboratory System. APHL wishes him well in his new position and looks forward to collaborating on future projects.

Devereaux Milburn, APHL's research and information manager, has accepted a new role internally as Web and information systems manager. In this position, Milburn will ensure that an appropriate level of technical support is provided for a number of the association's information technology initiatives. He will coordinate and manage the launch of a content management system that will link the APHL Web site with a new relational database. Milburn will also smooth the technical transition to this database, which will streamline and modernize many of APHL's business processes.

Patina Zarccone, MPH, formerly APHL's informatics and LIM systems manager, has been promoted into the position of director of strategic initiatives and research. In this role, Zarccone will manage the department's activities, which include survey development, National Laboratory System projects, informatics and knowledge management. APHL Executive Director Scott Becker remarked, "I am so pleased that Patina has agreed to take on this critically important role for the association and look forward to working with her." ■

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The Association of Public Health Laboratories (APHL) is a national, non-profit dedicated to working with its members to strengthen public health laboratories. By promoting effective programs and public policy, APHL strives to provide public health laboratories with the resources and infrastructure needed to protect the health of U.S. residents and to prevent and control disease globally.

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To submit an article for consideration, contact Emily Mumford via email, emumford@aphl.org.