Preventing for the Unexpected

If we learn anything from the past few weeks, it would be to prepare for the unexpected. In the midst of our bigger preparedness plans—for chemical or bioterrorism, for pandemic influenza—the mumps arrived. Although mumps infection is rarely life threatening, the resurgence of this virus is a serious test of our preparedness, our flexibility, and our support systems. Familiar issues have been raised: unusual disease presentation, specimen transport, reagent supplies, validated protocols, connection with CDC, training, ELR, even disease transmission through international and domestic air travel.

When the mumps appeared unexpectedly in Iowa, public health laboratorians quickly encountered a reagent shortage. There are typically about 300 cases of the mumps each year and the standard reagent supply is based upon this expectation. When a thousand cases pop up in six weeks, there will inevitably be a squeeze. So, the key question is: what happens when supplies run out? I can tell you that laboratorians were not shrugging and going home for the night. Instead, they have been working long hours. They have reached out to APHL and to CDC for support and information. They have contacted multiple vendors and requested more supplies, quickly. They are evaluating new methods for rapid diagnosis and working creatively with available materials. The states that have been hit hard are rising to the challenge and doing an admirable job, even performing some evaluation studies to help deploy new methods to other states.

We are, all of us, focused on bringing our laboratories into the 21st century, replete with cutting edge techniques and equipment. And this is surely the right thing to do, but the resurgence of the mumps has pointed to a curious phenomenon in our workforce. The gold standard for testing for mumps has pointed to a curious phenomenon in our workforce. The gold standard for testing for mumps has always been virus isolation, the province of classically-trained virologists. Increasingly, our laboratory staff is trained in molecular diagnostic methods, like PCR, and our traditional virology staff has diminished with each wave of retirements. This may be a good time for public health laboratories to take stock of things that haven’t been done in years, and make sure that we can still do them.

In numerous emergency planning sessions across the country, laboratorians have discussed the need for reliable courier systems for specimen transport. Getting specimens from the patient to the laboratory has always been fraught with expense, delay, and geographic challenges. While many of us rely on law enforcement to transport samples in suspect terrorism events, we cannot rely on them for other public health emergencies, emerging and re-emerging diseases. Iowa has had a quick testing turnaround with the help of its statewide courier service; when we advocate for funding for timely specimen transport that doesn’t rely on FedEx or law enforcement, we should recall their example.

These are the kind of core issues that the association’s new strategic plan aims to address. With the mumps outbreak, APHL is already beginning to fulfill some of its new goals—crisis coordination and addressing gaps. There was a flurry of contact between APHL staff, members and CDC; information was posted to the Web site; national conference calls were organized. Much can be accomplished at home by working jointly at the national level.

I would like to thank the board, committees and staff for making the year of my presidency a productive one. Our member volunteers pour ideas, dedication and manpower into APHL. Without such a broad base of support, the association would not be able to set and meet such lofty goals. Thank you for a wonderful year, and I look forward to seeing you at the Annual Meeting in Long Beach.

Katherine Kelley, DrPH
Director of Public Health Laboratories
Connecticut Department of Public Health
PHLs: Potential Leaders in the Fight Against Antimicrobial Resistance

There used to be a time when clinicians could rely on a familiar arsenal of antimicrobial agents to cure common infections that can sometimes become serious. Consider Group A strep. "When you go to your doctor, they always assume it’s susceptible to penicillin," said John Besser, the clinical laboratory manager for the Minnesota Public Health Laboratory. "While that assumption is still true, we’re not taking it for granted like we did with *Streptococcus pneumoniae* in the early 1980s, until people started dying of drug resistant infections."

Over the past decade or more, there has been a growing progression of microbes escaping the confines of modern medicine and developing resistance to the drugs widely prescribed for prophylaxis and treatment.

**Tracking the Problem’s Progression**

CDC’s Fred Tenover, associate director for laboratory science in the Division of Healthcare Quality Promotion, has been keeping track:

- It began with penicillin-resistant pneumococci.
- Then came multidrug-resistant pneumococci.
- Vancomycin-resistant enterococci.
- Multidrug-resistant *Pseudomonas aeruginosa* and *Acinetobacter* species.
- Community-associated methicillin-resistant *Staphylococcus aureus* (MRSA).
- And now Vancomycin-resistant *Staphylococcus aureus* (VRSA).
- The problem extends to some strains of tuberculosis, sexually transmitted diseases like gonorrhea and even food-borne bacteria like *Campylobacter jejuni* and *Shigella sonnei*. Alarmingly, a growing number of hospital-associated infections are resistant to all available antimicrobial agents, leaving physicians to experiment with potent drug combinations and leaving patients with prolonged illness, prolonged infectiousness and, depending on the site of infection, at increased risk for death.

The situation, said Tenover, “is serious and getting worse.” In 1999, the federal government established an interagency task force that outlined 80 activities the government could undertake to try to get ahead of the problem. As this plan recognizes, a top priority is to identify and monitor antimicrobial resistance trends—an activity that inevitably means greater laboratory testing.

**PHLs: The Frontline of Detection**

Of necessity, the bulk of this testing is being performed in hospital and other clinical laboratories in direct service to patient care. However, health authorities such as Tenover and his colleague J. Todd Weber, director of CDC’s Office of Antimicrobial Resistance, outlined an expansive role for public health laboratory (PHL) involvement in disease surveillance, confirmatory testing and quality assurance. “It’s not gonna be routine clinical work,” said Weber. “There’s going to have to be something that mandates the state’s involvement for disease control. Being leaders, really.”

Despite funding limitations, public health laboratory scientists in states like Connecticut, Washington, Minnesota and Michigan have taken this message to heart. They are mapping out critical roles for public health laboratory involvement and, in the process, making important contributions to the field.

The Michigan state public health laboratory, for example, detected the first case of VRSA in the world, a highly significant finding since vancomycin has been considered a drug of last resort to kill staph bacteria that are resistant to penicillin and methicillin.

After the FDA licensed a fluoroquinolone antibiotic for use in poultry, Besser’s shop in Minnesota documented dramatically increased rates of fluoroquinolone resistance in *Campylobacter jejuni*—the leading cause of human bacterial diarrheal illness in the nation. Following additional work by the CDC, this new information triggered changes to FDA rules for the approval of antibiotics for agricultural use. And the agency banned the use of fluoroquinolones in poultry altogether in September 2005.

Similarly, Minnesota laboratory surveillance detected increasing rates of Group B streptococcus (GBS) resistant to clindamycin. Antimicrobial agents are customarily administered during labor to women diagnosed as GBS carriers (about one in four women) to prevent transmission of this bacteria from mother to infant as the baby passes through the birth canal. Penicillin is the first line therapy, and clindamycin had been the alternative for women highly allergic to penicillin. Minnesota data were partly responsible for revised prophylaxis regimens for women with penicillin allergy in the CDC’s updated...
2002 guidelines for prevention of perinatal GBS disease.

The Minnesota laboratory—in collaboration with the CDC—also discovered a genetic mechanism of macrolide resistance in Bordetella pertussis, the bacterium that causes whooping cough.

"Because of this discovery," said Besser, "it is now possible to detect this particular type of resistance by molecular methods if a patient fails therapy." The availability of a molecular test is significant because most pertussis is now diagnosed through DNA methods rather than culture, and isolates are often not available for phenotypic susceptibility tests.

Conveying Valuable Information to Time-Strapped Clinical Labs

Less dramatic, but no less important, has been state public health laboratory support for the labs that perform antimicrobial susceptibility testing in clinical settings. CDC’s Weber averred that “clinical labs are clearly where all of this begins. If it’s not being detected there, or not being detected correctly, then everything else is really just a house of cards. We don’t know what’s going on.”

With a continuing national shortage of laboratory workers, the quality of testing in clinical laboratories cannot be taken for granted. Marty Boehme, a scientist at the Michigan public health laboratory, explained that “hospital medical technologists and microbiologists particularly are in short supply and working under tremendous stress everyday.”

"I keep going back to the situation of a lab that doesn’t have a PhD-level scientist to advocate for the money to join CLSI and purchase documents every year," said Boehme. "Helping them get the information and providing educational opportunities to help them understand the information, we felt was key."

With a continuing national shortage of laboratory workers, the quality of testing in clinical laboratories cannot be taken for granted.

Surveillance Leads to Key Discoveries

Then the Michigan public health laboratory went one step further. "We asked to see their antibiograms to see if they were making any changes based on the M39," said Boehme. Although it took a while for some laboratories to feel comfortable sharing this information, Boehme started a collection. In an innovative study that will eventually be published in a peer-reviewed journal, Boehme performed a quality assurance analysis on the institutional antibiograms for the years 2001, 2002 and 2003. Using a uniform checklist, Boehme and colleagues looked for anomalies: impossible, unlikely or misleading bug-drug combinations. A 50% rate of vancomycin resistance for Staphylococcus aureus would be considered impossible. Failure to report MRSA as resistant to all β-lactam drugs would be an error.

The state found that 56% of the antibiograms from 2001—prior to the Michigan public health laboratory’s outreach and training—contained at least one major error, compared to just 18% two years later. Thirteen percent of the 2001 antibiograms contained at least one dangerous drug-bug combination with potential for adverse health outcomes, compared to 0% in 2003. "We can’t show direct cause and effect," said Boehme. "But for whatever reason, the quality’s improving."

A second Michigan project of note involves gonorrhea. As it happens, the emergence of quinolone-resistant Neisseria gonorrhoea occurred just as many clinical laboratories began switching
from culture to molecular-based test methods for gonorrhea and therefore ceasing to collect the disease isolates. Boehme said the emergence of quinolone resistance was “quite alarming,” because quinolone is the only oral therapy recommended by the CDC for gonorrhea treatment, and patients generally prefer oral to intramuscular drug delivery. Moreover, since many gonorrhea patients fail to return for follow-up treatment, clinicians often have just one chance to administer an appropriate therapy.

At the time, no Michigan site was enrolled in the CDC’s gonorrhea surveillance project. Boehme said, “We had no way to know what was happening with gonorrhea in Michigan.” So, again relying on ELC funding, the state laboratory decided to conduct its own surveillance. The public health laboratory found about half a dozen labs that were still performing genital gonococcus cultures and recruited them to provide the state with gonococcus isolates. The project was concluding after six months when quinolone-resistant isolates started showing up, and the laboratory decided to continue its surveillance. Thus, this work is still ongoing today.

Boehme said, “We never would have known about these [drug resistant cases] had we not started this surveillance project. You can’t rely on treatment failure; it’s not a reliable indicator.” Not to be caught out again, the Michigan public health laboratory is now collaborating with the San Francisco Department of Public Health to develop a molecular-based method for the detection of antimicrobial resistance in gonorrhea.

Some PHLs Lead the Pack

Although there are no definitive data, states like Michigan and Minnesota are probably pursuing antimicrobial susceptibility issues more aggressively than most other state public health laboratories in the US. Janet Hindler, a clinical microbiology specialist at UCLA Medical Center, has been working with APHL for the past several years to develop and conduct training courses on antimicrobial susceptibility testing through the National Laboratory Training Network. Having interacted with public health laboratory scientists from across the nation, her take on the situation is that “some of the public health labs are doing a little bit of testing, some are doing a little bit more, but there’s no consistency across the country. Some of the PHLs can verify unusual results obtained on isolates submitted from clinical laboratories and some can’t.”

Kati Kelley, APHL president and director of the Connecticut Department of Public Health Laboratory, said “I think from the perspective of the PHL, infections and syndromes, and diagnostics for drug resistance in microbial pathogens, including in nonculture specimens).

Public Health Action Plan to Combat Antimicrobial Resistance


Three of the plan’s 13 top priority action items are relevant to public health laboratories.

- With partners, design and implement a national AR surveillance plan that defines national, regional, state and local surveillance activities and the roles of clinical, reference, public health and veterinary laboratories. The plan should be consistent with local and national surveillance methodology and infrastructure that currently exist or are being developed.

- Provide the research community genomics and other powerful technologies to identify targets in critical areas for the development of new rapid diagnostics methodologies, novel therapeutics, and interventions to prevent the emergence and spread of resistant pathogens.

- Identify, develop, test and evaluate new rapid diagnostic methods for human and veterinary uses with partners, including academia and the private sector. Such methods should be accurate, affordable and easily implemented in routine clinical settings (e.g., tests for resistance genes, point-of-care diagnostics for patients with respiratory

Laboratory Resources

Public Health Action Plan to Combat Antimicrobial Resistance


Multi-level Antimicrobial Susceptibility Testing Resources

www.phppo.cdc.gov/dls/master

A CDC Web site containing case studies, notices of training events, online courses, updates of testing standards, disease testing and reporting protocols and more.

APHL/CDC National Laboratory Training Network

www.nltn.org

A source of training for antimicrobial susceptibility testing geared to the needs of public health laboratories.

Clinical and Laboratory Standards Institute (CLSI)

www.nccls.org

The source for CLSI antimicrobial susceptibility testing updates.
it has been regarded as a real problem, a growing problem, but one that is more in the purview of the healthcare community… The funding and the resources and the incentives haven’t been there to engage the PHL community and probably public health epidemiology as well.”

**Federal Grants Vital**

Connecticut is one of 11 states—Minnesota is another—that was awarded an Emerging Infections Program (EIP) grant to assess the public health impact of emerging microbes and evaluate methods for their prevention and control. Using EIP funds, the laboratory is collaborating with the state epidemiologist and Yale University School of Public Health to monitor the spread of MRSA.

The big concern in Connecticut is that hospital-associated strains of the bacteria may be mixing with community-associated strains. Such mixing is bad news in both directions. On the one hand, the community-associated strains tend to be more virulent and thus to cause more serious disease in hospitalized patients. On the other hand, the hospital-associated strains are more frequently multidrug-resistant and will be difficult to control once they escape the enclosed confines of the hospital setting and begin circulating in the community-at-large.

To support the project, the public health laboratory does confirmatory testing on a limited number of MRSA specimens and characterizes them via molecular subtyping to identify the strain. EIP money pays for staff positions, specimen shipping and the testing reagents. “If the [EIP] money went away,” said Kelley, “we would have to sit down with our partners—especially our state epidemiologist who is very interested in this issue—and we would have to decide, is this so important that we have to give up something else.”

Boehme said, “We had no way to know what was happening with gonorrhea in Michigan.” So, again relying on ELC funding, the state laboratory decided to conduct its own surveillance.

**PHLs: Information Clearinghouses**

Given that the problem of antimicrobial resistance is likely to worsen in the near future, public health laboratory involvement will become more and more important. Among the latest concerns are:

- A lack of new classes of drugs in the foreseeable future to treat Gram-negative infections.
- The emergence of resistance to vancomycin, a drug reserved for the most intractable infections.
- The detection of inducible macrolide resistance in *Staphylococcus* and *Streptococcus*, a development that changes the way susceptibility test results should be interpreted for certain classes of drugs.
- The whole issue of decreased susceptibility, that is, the presence of resistant subpopulations that is difficult to detect in the clinical laboratory, but that is probably clinically meaningful.

As Tenover averred, “[State PHLs] do play a very important role in monitoring for emerging resistance. The better informed that they are, the better we’re going to be able to react to the next emerging resistance problem.”

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**SAVE THE DATE**

2007 APHL Annual Meeting
Jacksonville, FL

June 3-5, 2007

Hyatt Regency Jacksonville Riverfront
Miami was a notable setting for the 10th Annual PulseNet Meeting, which celebrated the first full decade of the network and marked the final meeting of its founder, CDC's Dr. Bala Swaminathan. Over 170 laboratorians representing the United States, Canada and eight other nations participated. In addition to city and county laboratories, 49 states and Puerto Rico were represented. The meeting was once again co-located with the National Foodborne Epidemiologists Meeting (NFEM), and the two groups joined forces during three plenary sessions and one combined break out session, allowing ample opportunity for state partners to work together on issues within their jurisdiction. Reflecting cooperation with PulseNet's federal food safety partners, invited speakers were Dr. Richard Raymond, under secretary for food safety at USDA/Food Safety and Inspection Service, and Dr. Robert Brackett, chief of FDA’s Center for Food Safety and Applied Nutrition. Both speakers emphasized how PulseNet’s success has improved US food safety and challenged all professionals in the field to continually strive to do better.

The majority of the meeting focused on technical sessions that allowed participants to gain practical knowledge on how to detect clusters of foodborne illnesses using the latest software and laboratory techniques. Review sessions provided an opportunity to explore the lessons learned from the outbreaks detected in 2005. The plenary sessions presented the latest hot issues in foodborne illness investigation, including second enzyme testing, next generation subtyping methods, PFGE pattern interpretation and the advent of molecular testing and its impact on public health.

When available, the proceedings of both meetings will be posted at www.aphl.org/conferences/proceedings.cfm, along with information about the 11th Annual PulseNet Update Meeting, to be held at the Marriott Providence Downtown in Providence, RI, from April 16-19, 2007.

You Might be a PulseStar…

Each year, three PulseNet participants from local, county or state public health laboratories are selected as PulseStar Award winners. The award consists of a plaque from CDC and a check in the amount of $500.00 from APHL. The efforts of all nine of this year’s nominees qualified them as outstanding candidates for the award. This year’s winners are Cathy Adams from the San Diego County Public Health Laboratory, Ann Woo-Ming of the Colorado Department of Public Health and Environment, and Alison Houston from the University of Iowa Hygienic Laboratory.

Ongoing Validation of E. coli O157:H7 MLVA Protocol in 10 States

Building on research by Sandy Smole of the Massachusetts State Laboratory Institute, CDC’s Eija Trees is leading the validation of next-generation PulseNet methods for E. coli O157:H7. Of 10 domestic public health laboratories invited to participate in the external validation studies, five laboratories (three Beckman CEQ users and two ABI users) have successfully completed Phase I. Two CEQ laboratories have also submitted all their Phase II data. So far, the data looks to be very reproducible on the Beckman instrument and fairly reproducible on the ABI. Due to a number of technical difficulties, the deadline for completing the study has been extended by two months to May 31, 2006.

As CDC hopes to launch a final E. coli protocol in a limited number of laboratories by the end of 2006, training opportunities in the MLVA procedure will be offered this fall. A national data-
FDA Discusses Proposed Studies to Validate Over-the-Counter Home-Use Rapid HIV Test

The FDA continued to explore the feasibility of an over-the-counter (OTC), home-use, rapid HIV test at its quarterly Blood Products Advisory Committee (BPAC) meeting in March. After reviewing the committee's previous input, the FDA has proposed studies required to validate the test for OTC home-use. At the March meeting, the FDA asked the BPAC to guide these proposed studies with regard to test accuracy and interpretation, as well as the practicability of medical follow-up based on a user's receipt of informational material included in the kit—rather than the current standard of meeting with a trained test operator and counselor.

The proposed studies seek to:

- Identify potential users of the test.
- Establish the inherent sensitivity and specificity of the test and to demonstrate that the test is capable of withstanding operational stress (Phase I). (These studies should be performed by trained personnel.)
- Evaluate, in a controlled setting, the ability of untrained users to collect samples and perform and interpret the test correctly (Phase II).
- Evaluate the test in an unobserved, uncontrolled (intended use) setting (Phase III).

APHL/CDC HIV Steering Committee Discusses Changes to Current HIV Diagnostic Testing Algorithm

The APHL/CDC HIV Steering Committee, chaired by Massachusetts's Barbara Werner, PhD, met in March at CDC to discuss potential changes to the current HIV diagnostic testing algorithm. Committee members listened to presentations of existing data relating to potential laboratory algorithms, as well as ongoing and proposed studies. These data will be used to assess what holes exist in the current testing algorithm so that new algorithms can be developed.

APHL Members Meet with CDC to Align STD Priorities

Members of APHL's new STD Steering Committee, chaired by Susie Norris Zanto (MT), met with CDC's Division of STD Prevention (DSTDP) to align diagnostic priorities of the public health laboratory and the government perspectives and to open solid communication channels between the committee and agency. During this initial meeting, the new committee and its priorities were formalized.

The committee will focus on the privatization of STD laboratory testing, repeat testing for gonorrhea and chlamydia, improved syphilis testing, inclusion of public health laboratories for lymphogranuloma venereum (LGV) testing, development of panels for use by public health laboratories as verification or controls, development of protocols to identify alternative testing methods prior to emergency situations, and reporting issues from both private and public health laboratories. The committee plans to address these issues, in addition to other priorities as they arise, in the upcoming year.

Members of the STD Steering Committee

APHL members and staff:
Susie Norris Zanto (MT)
Richard Alexander (Contra Costa Regional PHL)
George Dizikes (IL)
James Gibson (TN)
Meloney Russell (KY)
Anthony Tran (APHL)

National Chlamydia Laboratory Committee:
Rick Steece

CDC:
Ronald Ballard
Stuart Berman
Robert Johnson
Michele Owen
John Papp
John Ridderhof
Steven Shapiro
The APHL Infectious Diseases Committee, chaired by Jane Getchell, DrPH, met in March at the International Conference of Emerging Infectious Diseases (ICEID) in Atlanta. Members met with CDC representatives to discuss the agency's reorganization, particularly the proposed structure of the Coordinating Center for Infectious Diseases (CCID), and how APHL can partner with CDC centers to achieve the strategic goals of both groups.

From the National Center for HIV, STD, and TB Prevention, Dr. Kevin Fenton, director, and Dr. Michele Owen, acting associate director of laboratory science, discussed the reorganization plan that will integrate the Division of Viral Hepatitis into the center. Fenton reviewed the leadership structure of the proposed National Center for HIV, Hepatitis, STD, and TB Prevention (NCHHSTP) and the 2006 center priorities. These priorities address center accountability, communication, leadership, program integration and scientific excellence. Fenton and Owen are eager to work with APHL to address NCHHSTP priorities; Owen will assume the role of NCHHSTP liaison on APHL's Infectious Diseases Committee.

The committee also had an opportunity to meet with Drs. Devery Howerton and John Ridderhof from CDC's Division of Laboratory Systems. Howerton informed the group that, due to budget cuts, CDC's Model Performance Evaluation Program (MPEP) for HIV and tuberculosis is under evaluation. Howerton asked for feedback on MPEP's importance; committee members reported that MPEP is a vital tool used by public health laboratories to educate HIV rapid testing sites. Ridderhof discussed the Laboratory Outreach and Communication System (LOCS), a new program designed to communicate with and educate the broad laboratory community on dynamic laboratory topics. LOCS aims to be the central source for laboratory professionals to obtain credible information on routine and emergent issues. Ridderhof invited the Infectious Diseases Committee to submit topics for upcoming conference calls. As previously reported in the Minute, CDC partnered with APHL to organize the inaugural LOCS call, “What Clinical Laboratories Need to Know About Their Role in Influenza Testing.”

Drs. Nancy Cox and Steve Lindstrom from CDC’s Influenza Branch provided an update on avian influenza activities. Cox reported the avian influenza virus has evolved rapidly since the first outbreak in 1996 due to the virus moving through many species. Current avian H5N1 viruses circulating in Asia belong to two genetically distinct lineages (cluster 1 and 2) that have both caused infections in humans. To assist public health laboratories with rapid influenza detection and subtyping, CDC updated the real-time RT-PCR protocol for detection of influenza A and B, which was posted on APHL’s members-only Web site in October 2005. The updates to this protocol improved the overall sensitivity of the assay, as well as increased the detection sensitivity of viruses of both lineages. Cox also reminded the committee that CDC needs isolates from the public health laboratories to assist with strain surveillance and vaccine development. Specifically, CDC requests any influenza A/H1 subtypes that were collected since October 1, 2005, along with corresponding original clinical material whenever available.

With the recent release of the Laboratory Response Network (LRN) Assay for influenza A/H5, the Infectious Diseases Committee created the Algorithm Working Group. The group, with consultation from CDC Influenza Branch representatives, will create an influenza testing algorithm for state public health laboratories that incorporates both the LRN and Influenza Branch protocols. APHL representatives on the working group include: Drs. Jane Getchell (DE), Patricia Somsel (MI), Mike Pentella (IA), Pete Shult (WI), Lisa Weymouth (VA) and Kirsten St. George (NY). Once completed, the algorithm will be posted to the APHL members-only Web site.

2006 ICEID Successful

The 2006 International Conference of Emerging Infectious Diseases (ICEID) was held in Atlanta in March. Michael Pentella, PhD, from the University of Iowa Hygienic Laboratory represented APHL on the scientific program planning committee. The planning committee's goal was to bring together public health professionals to build relationships and to plan the next steps in response, research and prevention strategies for emerging diseases. Plenary and slide presentations addressed an array of topics such as zoonotic and vector-borne disease, foodborne and waterborne diseases, surveillance, the global and local impact of emerging infectious diseases, and public health policy.

In her opening remarks, Julie Gerberding, MD, MPH, CDC director, highlighted the current public health situation in which global threats have local impact and local threats have global impact. Keiji Fukuda, MD, MPH, reiterated Gerberding’s comments with his opening presentation, “Pandemic Influenza and the Global Challenges.” The conference sessions that targeted influenza issues included:

- Avian Influenza
- Influenza Surveillance, Diagnosis and Impact
- Avian Flu Transmission and Risk Management
- On the Fly: Media Portrayals of Avian and Pandemic Influenza

Continuing with the theme of global impact of infectious diseases, the conference planning committee assembled a diverse group of speakers to present on an array of topics ranging from bloodborne pathogens to travelers' health. The conference sessions that highlighted global infectious disease challenges faced in public health included:

- Viruses Without Borders: Iatrogenic Transmission of Bloodborne Pathogens

Continued on page 10
APHL’s EID Fellowship Program was well represented at the International Conference on Emerging Infectious Diseases (ICEID) in Atlanta in March. Most current fellows attended, and many showcased their research in oral or poster presentations. Rebecca Garten gave an oral presentation, “Analysis of H5N1 Influenza Viruses from Humans and Birds Between 2003 and 2005 Reveals an Increase in the Spectrum of Viruses with Pandemic Potential,” which was highlighted by a press release; as a result, she was quoted in the Wall Street Journal. Oral presentations were also given by Melissa Whaley, “A Combination Vaccine of Recombinant PsA and PCV7 Reduces Streptococcus pneumoniae Non-vaccine Serotype Colonization in a Murine Model,” and Lisa Calhoun, “Combined Sewage Overflows (CSO) as a Breeding Site for Culex quinquefasciatus, Major Vector of West Nile Virus (WNV) in the Eastern United States.”

The following fellows had poster presentations at the meeting:

Julie Anderton: “E-cadherin is a Human Nasopharyngeal Cell Receptor for the Common Protein of Streptococcus pneumoniae: Pneumococcal Surface Adhesin A (PsA)”

Kari Belin: “Development and Implementation of a Real Time PCR Assay to Detect Borrelia burgdorferi in Ixodes scapularis Ticks”

Bradley Changstrom: “Statewide Surveillance and Forecasting of West Nile Virus Activity in Iowa”

Angela Fritzinger: “Nucleic Acid Sequencing of Region B of the Norovirus RNA Polymerase Gene”

Heather Masri: “Detection of Eastern Equine Encephalomyelitis (EEE) Infection in Sentinel Chicken Specimens from Eastern Virginia”

Amanda Tiffany: “Identification of a Novel Simian Foamy Virus Infection in a Central African Originating from a Mona Monkey (Cercopithecus mona)”

Katilin Rainwater: “Serosurveillance for Anaplasma phagocytophilum Antibodies in White-tailed Deer (Odocoileus virginianus) in Iowa”

Scott Shone: “Bordetella pertussis Identification by Real-Time PCR: A CLIA-Compliant Assay”

In other fellowship news, Daniel Streicker participated as faculty in the January NLTN Rabies Diagnostics training course held at CDC. The February Conference on Retroviruses and Opportunistic Infections (CROI) included a poster by Yashieka Blount: “Patterns of Cross-Clade Neutralizing Antibody Responses in HIV-1-Infected Cameroonians.”

2006 ICEID

Global Issues in HIV
Global Environment Change and Emerging Infectious Diseases
International Migration and Traveler’s Health
Energy Strategies to Meet the Global Challenge of Foodborne Diseases.

James Hughes, MD, former director of the CDC National Center for Infectious Diseases, was honored by the ICEID program committee for his outstanding vision, leadership and commitment to public health and to the surveillance, response and prevention of infectious diseases. During Hughes’ tenure at CDC, the first International Conference on Emerging Infectious Diseases was organized in 1998 in collaboration with public health partners.

A CD-ROM of all the presentations can be ordered at www.conferencearchives.com/iceid.
“Become a Disease Detective: Discover Public Health” was the theme of the second public health career fair held at the University of Texas at Austin (UT) campus in April. The career fair provides undergraduate students with insight into the world of public health and stimulates interest in selecting the field as a career path.

Public Health Partners Sponsor Event
In addition to APHL, several other organizations sponsored this conference, including the Center for Biosecurity and Public Health Preparedness at UT School of Public Health-Houston, the CDC, the Texas Department of State Health Services (DSHS) and Austin/Travis County Health and Human Services Department.

Educating Student Advisors about Public Health Careers
The event began with a campus luncheon for advisors and career center directors from all university departments, which encouraged interaction among the attending public health professionals. Dennis Perrotta, PhD, CIC, former state epidemiologist and associate professor of epidemiology and biosecurity at the UT School of Public Health, gave a presentation on academic preparation for entering different fields in public health. The advisors received binders of information on public health careers and other resources, which could then be given to interested students.

Presentations to Students Reveal Depth of Available Work
The following day, there was a free lunch for students that featured a presentation by Perrotta and Allison Foster, from the Association of Schools of Public Health, entitled, “The Fantastic Field of Public Health!” Throughout the afternoon there were twelve concurrent sessions, including one given by Susan Neill, PhD, MBA, director of the Texas Public Health Laboratory, and Eva Perlman, MPH, APHL’s senior director of professional development, on public health laboratory science. Other notable presentations included “Women in Medicine-Women in Public Health,” “A Career in Public Health Law,” “A Disease Detective Tackles Border Health,” and “Veterinarian Disease Detectives: Emerging Threats from Animals to Humans.” Later that day, a presentation by Eduardo Sanchez, MD, MPH, commissioner of DSHS, on discovering public health as a career, acted as a segue into the keynote presentation by C.J. Peters, MD, on tracking hemorrhagic fevers in Africa. After refreshments, the day ended with an engaging presentation by Fady Joudah, MD, from Doctors Without Borders, entitled “Humanitarian Crisis in Sudan: A Doctor Without Borders.” The presentation was a picture documentary of Joudah’s experiences and the obstacles he and his colleagues had to overcome to provide essential healthcare services to the people of Sudan.

Exhibits Showcase the Field
APHL set up an exhibit booth to reach out to the participating students, distributing the Pfizer Guide to Careers in Public Health and the Pfizer Milestones in Public Health books, donated by the Pfizer Public Health Group, and providing information on laboratory science and the EID Fellowship program. Other exhibitors at the career fair included several schools of public health, the Texas DSHS, the US Public Health Service, CDC, the Peace Corps, ASPH and Doctors Without Borders.

Measuring Success of Career Fair
Over 500 students attended the events, including some students and teachers from an Austin area high school. Over 200 students stopped by the APHL booth and showed interest in the field of public health laboratory science. As at the 2003 public health career fair, many students were not aware of the career options available, and most were eager and enthusiastic to “discover public health.” To view the entire listing of events, sponsors and resources, log on to www.sbs.texas.edu/publichealth/.
Addressing Public Health Leadership Vacancies

APHL’s workforce initiative, supported by the Robert Wood Johnson Foundation, is forging ahead in its efforts to address critical leadership vacancies in the public health laboratory community. A second in-person meeting is scheduled April 20-21, 2006, to further develop the strategic roadmap needed to recruit, mentor and prepare current and emerging leaders, as well as to find compelling ways to “build the pipeline” by attracting future laboratory scientists into public health. State and local laboratory directors, representatives from CDC and the Health Resources and Services Administration, academia, private industry and key APHL staff will participate in the meeting.

APHL’s National Public Health Leadership Institute Scholars Team is also an integral part of this effort (see www.phli.org for more information on the program). Members Jack DeBoy (MD), Patrick Luedtke (UT), Nancy Warren (PA) and Michael Wichman (IA) are collaborating to develop a toolkit to assist in the recruitment and retention of laboratory scientists. Their work includes identifying ways to align academic and state-based programs that can equip future public health laboratory leaders, integrating public health laboratory competencies and model job descriptions, as well as developing standardized position terminology, job classifications, career paths, national salary ranges and strategies for mentoring programs.

Attend the workforce initiatives plenary session at the upcoming APHL Annual Meeting on Tuesday, June 6, 2006, from 8:30 am–10:00 am to learn more and to join the discussion. Member input is invaluable to these processes.

High-Quality, Low-Cost National Training Events Planned

The National Laboratory Training Network (NLTN) held a week-long staff meeting at the new APHL headquarters in Silver Spring, MD, at the end of February. This semi-annual meeting was held to update staff on the funding status of its cooperative agreement with CDC, and to review past training and plan for future events.

Funding Status Precarious

Representatives from CDC, the APHL Board of Directors and the APHL executive team reported to the staff the tremendous uncertainty associated with CDC funding this coming fiscal year. APHL has hired a marketing analysis company, which presented the timeline and focus of the evaluation that will unfold over the next four months; the company will finalize a report in May with a business plan for the NLTN. The NLTN structure will likely need to change so that it can continue to provide excellent training programs to the public health laboratories and clinical laboratories.

High-Quality, Low-Cost National Training Events Planned

A comprehensive teleconference schedule for 2006 and 2007 was finalized. This national listing of about 25 audio and/or Web-conferences will have a standardized look and format, a reasonable price of $50.00 per site, and will reach a large audience with a variety of hot topics.

Despite the uncertainty about the program’s funding, the NLTN is committed to delivering unique, high-quality training programs. Information on upcoming training events will continue to appear in APHL’s E-Update and at www.nltn.org.

New Offerings from NLTN

Laboratory Learning Links
Teleconference Series begins in June 2006

Self-Study Options for Continuing Education
Register online for self-study modules at www.nltn.org/courses

Upcoming Courses
Packaging & Shipping
Environmental QA
Intestinal and Bloodborne Parasitology
Mycology and much more!

Register online at www.nltn.org/courses

For more information on these or other options from NLTN, contact us at 800.536.NLTH (6586) or www.nltn.org
Knowledge management is the systematic collection, transfer and organization of tacit and explicit information from individuals and/or organizations. APHL established the Knowledge Management Committee last year to gather and organize the extensive, collective knowledge of its members, as well as the large quantity of data collected through surveys. The committee will provide oversight for APHL surveys, reports and knowledge management for the association. The committee aims to provide expertise and assistance in the following areas:

- To help produce useful information for public health practices for APHL membership and other interested parties.
- To advise the APHL Board of Directors on key issues by opening channels of communication and interacting with other committees and members.
- To collect, manage and disseminate public health data.
- To coordinate systems and resources to foster the maintenance and sharing of APHL data and promote a culture of sharing and collaboration among members.
- To advise and provide guidance on APHL research agenda and topics in knowledge management.
- To help in survey design with members and partner organizations.
- To collect, manage and disseminate public health data.
- To coordinate systems and resources to foster the maintenance and sharing of APHL data and promote a culture of sharing and collaboration among members.
- To advise and provide guidance on APHL research agenda and topics in knowledge management.
- To help in survey design with members and partner organizations.

Because of its cross-cutting charge, the Knowledge Management Committee has a liaison member from each APHL committee to help foster communication and information sharing. The committee looks forward to fruitful interactions with APHL membership.

Managing Knowledge as Strategic Asset

At a recent committee meeting, Melinda Bickerstaff, Senior Vice President, Learning and Development at Discovery Communications Inc., gave a presentation, “Managing Knowledge as a Strategic Asset.” Bickerstaff underscored that knowledge management is often geared to knowledge which is not easily codified, such as the intuition of key individuals that comes through years of experience and the ability to recognize various patterns of behavior that someone with less experience may not recognize. To request a copy of her presentation, contact Jim Hidalgo at 240.485.2762.

Using Laboratory Information Systems to Fight AIDS in Vietnam

The President’s Emergency Plan for HIV/AIDS Relief (PEPFAR) is a five-year, $15 billion pledge by the US government to combat HIV/AIDS in specified focus countries. A top objective of this plan is an escalation of anti-retroviral therapy (ART) for patients affected by HIV/AIDS.

This intensification in HIV/AIDS treatment activities as a result of the PEPFAR pledge translates into an increased need for quality laboratory data to assist in monitoring patients’ care and treatment. This swell in laboratory testing has put a strain on the human resources at laboratories that support Volunteer Counseling and Testing (VCT), Prevention of Mother to Child Transmission (PMTCT) and HIV Outpatient Clinics. One mechanism to reduce this strain is the deployment of laboratory information systems (LIS) to support everyday business processes and relay relevant patient test information in a timely manner.

The current lack of LIS presents the following complications to supporting robust ART programs in PEPFAR focus countries:

- No historical laboratory data for patients on ART.
- Demographic and result transcription errors.
- Increased turn-around time of significant test results.
- Limited ability to report aggregate data.

To advocate the increased use of LIS in PEPFAR focus countries, APHL’s laboratory informatics and global health programs have joined forces with CDC’s Global AIDS Program for this goal of implementing appropriate solutions in at least three PEPFAR countries by the end of 2007.

In February, APHL staff Patina Zarcone and Michelle Meigs traveled to Vietnam to begin work on the first LIS pilot project. This pilot project will focus on two laboratories, one in Hanoi and the other in Ho Chi Minh City. The main goals of the trip were to document the laboratories’ current data management practices, document the work performed in the laboratory and meet with key stakeholders in both cities to garner support for the project. The expected outcomes of this pilot will be to identify areas in which the laboratory can improve current data management, development of an RFP for software, hardware and maintenance, and the identification and deployment of LIS in both pilot sites February 2007.
Global Health

Building Laboratory Information Systems in Tanzania to Combat AIDS

The APHL global health program has received funding from the President’s Emergency Plan for HIV/AIDS Relief (PEPFAR) to strengthen laboratory information systems (LIS) in Tanzania. A team from APHL consisting of Robert Bostrom (KS), Alpha Diallo (DC) and Lucy Maryogo-Robinson, APHL global health program manager, participated in an assessment visit to Tanzania in March.

The team visited the Muhimbili National Hospital in Dar-es-Salaam, Bugando Zonal Hospital in Mwanza and the Shinyanga Regional Hospital in Shinyanga to determine the current capabilities of the laboratories to support electronic data collection and transfer. Along with Tanzanian government and health officials, CDC Tanzania staff and other key stakeholders, the team also facilitated a workshop on LIS requirements, the current status of laboratory information in Tanzania and the development of new reporting forms for HIV testing laboratories.

The APHL team identified two distinct data needs requirements for LIS in Tanzania: timely aggregate management data in order for the Ministry of Health (MOH) to effectively allocate resources and develop sound health policies; organized and accessible patient, specimen and result information so that individual laboratories can create management reports for the MOH and manage patient data within the laboratory.

Following the in-country activities, the team developed a preliminary action plan, recommending that LIS capabilities be implemented in Tanzania in two phases in specific pilot sites. In Phase I, the plan is to modify and standardize submission and reporting forms; strengthen the MOH’s human, software and hardware resources; install hardware and software in the pilot sites; and train staff. During Phase II, the LIS will be fully implemented and tested in the pilot laboratories. Completion and successful testing and training at the pilot sites will set the stage for similar implementations elsewhere in Tanzania. APHL’s global health program looks forward to collaborating with the Tanzanian laboratory community to strengthen laboratory information systems.

For more information on this partnership, email globalhealth@aphl.org.

Get Involved!

Discover a variety of ways you can be more involved in association activities and get the most out of your APHL membership at www.aphl.org/about_aphl/membership/
Kenya Laboratory Management Workshop

The APHL global health program has partnered with CDC’s Global AIDS Program (GAP) to achieve the President’s Emergency Fund for HIV/AIDS Relief (PEPFAR) goals of reducing HIV transmission and improving HIV/AIDS care and treatment around the world. Improving laboratory capacity is central to that goal. In PEPFAR countries, it is necessary to broaden diagnostic capabilities and establish mechanisms to ensure consistent laboratory methods and quality results—and quality laboratory management overall—especially laboratories in resource-poor settings strive to meet the PEPFAR annual targets. The promotion of quality laboratory management internationally remains a paramount goal of APHL’s global health program.

The APHL Laboratory Management Workshop was piloted in Darwendale, Zimbabwe, in April 2004. In June 2005, the APHL global health program launched a revised, five-day laboratory management workshop in Harare, Zimbabwe. Based on input from participants of both workshops, APHL further modified the training package and delivered the course to a new audience in Kenya February 27–March 3, 2006.

The CDC Kenya office, the Kenyan Ministry of Health (MOH) and APHL’s global health program collectively held a week-long Laboratory Management Workshop in Mombasa, Kenya. Laboratory managers, supervisors and directors from Kenya’s seven provinces and the Nairobi area participated, along with labarotaries from Ethiopia, Uganda, Namibia, Tanzania and the Clinton Foundation. Designed with the assistance of the Kenyan public health laboratory community, the workshop provided an introduction to basic managerial concepts and methods, which could be used in an immediate and practical way to analyze, enhance and improve current health laboratory management and to plan strategically.

APHL’s Dr. Sally Liska, director of the San Francisco Public Health Laboratory, and global health consultants Dr. Bradford Hill, Eve Gadzikwa and Kim Lewis lectured on a myriad of modules, allowing for diversity in the presentation of the material. Local labarotaries from CDC Kenya, Dr. Peter Tukei and Catherine Mutura, as well as Jackton Nyamongo of the Kenya MOH, specifically addressed the laboratory management issues within the Kenyan context.

In addition to the laboratory management concepts, a secondary focus of the workshop was on strategic planning. With support from APHL and CDC, the Kenya MOH is finalizing their strategic plan for laboratories. Nyamongo and Tukei gave presentations on the strategic goals currently under consideration by the Kenya MOH. This training provided an unprecedented forum for the Kenyan laboratory professionals, as well as their international visitors, to explore the critical components of strategic planning and their role in implementing such activities.

Leadership, financial management, team building, communications, motivation, problem solving, organizational structure, lean thinking and six-sigma were other topics covered during the course of the week. The workshop was well received by the participants. One participant reported, “This workshop will go a long way in changing the managing laboratory service in the country. I hope this will be a continuous process of learning.” APHL intends to further develop the Laboratory Management Workshop and provide it to other countries in Africa and around the world.

For more information, email globalhealth@aphl.org.
Environmental Health

Environmental Health Committee Meeting:
Giving EH Issues a Voice on Capitol Hill

APHL’s Environmental Health Committee (EHC) held a two-day meeting in February to address priority issues affecting environmental health. Having pioneered the practice of APHL committee “Hill Visits” last year, EHC members again visited Congress to promote public and environmental health laboratory issues.

Members Raise Environmental Issues with Congressional Staff
Committee members met with staff of House and Senate leaders from their respective states. During these visits, EHC members educated Congressional staff about the role of APHL and emphasized the importance of supporting the state public health and environmental laboratory systems. Environmental health topics discussed included: 1) The need to ensure a robust infrastructure for all-hazards/chemical terrorism preparedness and response; 2) The need to promote increased and continued funding and support for nationwide human biomonitoring and environmental public health tracking activities; and 3) The need to enhance existing environmental data standards and environmental regulations. Meetings were held with Congressional staff from Maine, Vermont, Rhode Island, Kansas, Oregon and Iowa. Peter Kyriacopoulos, APHL’s director of public policy, organized the meetings, which capitalize on members’ presence in Washington and help the association build key relationships with Congressional staff.

Committee Addresses Key Issues
During its annual meeting, the committee focused on the following issues:

- All-hazards/chemical terrorism laboratory preparedness and response (i.e., environmental testing issues.)
- Environmental laboratory accreditation (i.e., NELAC and NELAP)
- Triage facilities/all-hazards receipt facility.
- Roles of APHL members in various laboratory networks (i.e., Integrated Consortium of Laboratory Networks.)
- Environmental health training needs (i.e., Environmental Health Traineeship and Fellowship Programs.)

Taking a Stance on Environmental Laboratory Accreditation
Each topic before the committee yielded detailed discussion, which led to the creation of a series of action items. However, the issue of environmental laboratory accreditation, specifically the future of NELAC/NELAP, continues to be a principal area of concern for APHL members. This matter has become especially significant since APHL received a cooperative agreement from EPA: it tasks the association to create an “organizational home” for state environmental laboratories, all of which will be seriously affected should accreditation be privatized.

The committee believes that laboratory quality and competency are important national concerns that have only been intensified by issues surrounding homeland security and all-hazards preparedness. The committee contends that EPA should accept responsibility as the NELAP accrediting authority to provide federal accreditation to state environmental laboratory programs. The EHC and APHL would work collaboratively with EPA to help the agency earn this status, or to develop an alternative federal process to accredit state laboratories for other environmental programs.

NELAP/NELAC: Making Sense of Environmental Laboratory Accreditation
The National Environmental Laboratory Accreditation Program (NELAP) is the program that implements the standards of the National Environmental Laboratory Accreditation Conference (NELAC). NELAC is a voluntary association of state and federal agencies formed to adopt and promote mutually acceptable performance standards for the inspection and operation of environmental laboratories. At present, NELAC is a cooperative effort of the EPA, state and other federal agencies. Additional information regarding NELAP/NELAC can be obtained by visiting www.epa.gov/nelac/nelap.html.

Recently, the EPA has expressed a desire to lessen their oversight of the program and move towards a more privatized approach. Many APHL member laboratories are concerned with this movement and stress that certification and accreditation of state laboratories are functions of government, not functions of private industry. While private industry may perform certain functions associated with accreditation or certification, such as data review or conducting onsite laboratory evaluation, the actual process of issuing accreditation is executed at the governmental level.
Members Meet with Key Congressional Staff at Hill Day 2006

APHL’s annual Hill Day took place on March 23, 2006, in Washington, DC. Members from eleven states met with key Congressional offices to provide a status report on the operations of their laboratories and to explain the impact of proposed federal funding decisions.

APHL’s top priority is increased funding for CDC that will allow it to provide: a stable and reliable supply of reagents for the laboratories that comprise the Laboratory Response Network; funding for states to implement biomonitoring plans; and increased funding for states through the Epidemiology and Laboratory Capacity program.

APHL members also explained the importance of funding increases for CDC’s work on tuberculosis, influenza surveillance, newborn screening, and food safety. Fact sheets providing additional detail can be found at www.aphl.org/policy/priority_issues/factsheets.cfm.

In addition to APHL President Kati Kelly (CT), members who participated included: President-elect Jane Getchell (DE); Paul Kimsey (CA); Ming Chan (FL); Mary Gilchrist (IA); Frances Downes (MI); Scott Zimmerman, Ann Willey, Ken Aldous and Kirsten George (NY); Mary Abrams (OR); Susan Neill (TX); Janet Klawitter, Julie Tans-Kersten and Chris Worley (WI); and Richard Harris (WY).

For more information on Hill Day, contact Peter Kyriacopoulos at peter.kyriacopoulos@aphl.org.

EH Committee Meeting

Continued from page 16

similar to the current state drinking water program. To avoid conflicts of interest, accreditation should be a government function so as to ensure reciprocity and to strengthen the states’ positions as providers of environmental health data of known, documented and consistent quality.

To push the accreditation issue forward at the federal level, the EHC devised a stepwise plan. A component of this plan will involve the formulation of a response to former Office of Research and Development Administrator Timothy Oppelt’s letter of May 2005, which requested that APHL provide justification for why accreditation should be a government function. Currently, the plan to address accreditation is being reviewed for approval by the APHL Board of Directors.

The EHC has been keeping abreast of issues related to NELAC/NELAP and monitoring the situation, and as a result of a new cooperative agreement established between APHL and EPA, a new subcommittee of the EHC, the Environmental Laboratory Subcommittee, is being formed. This subcommittee will address laboratory issues specific to state environmental laboratories in a more direct and detailed way, while simultaneously maintaining a dialogue with the EHC to ensure collaboration on environmental laboratory topics as appropriate.

For more information on the Environmental Health program, contact Lauren DiSano, environmental health program manager, at lauren.disano@aphl.org.
It has often been said that as goes California, so goes the nation. The saying holds true in the realm of public health laboratory practice, expect a modernizing trend. Last year the California state public health laboratory finished a five-year move into a brand new, 500,000-square-foot facility that its director, Paul Kimsey, calls “world class.”

“Our old facility,” said Kimsey, “was designed in the 1940s, built in the 50s and went out of date in the 70s.” In the early 1990s, the state government committed to a serious investment in public health that now yields considerable benefits to the people of California.

The new state public health laboratory (PHL)—situated in the East Bay of San Francisco in the city of Richmond—occupies 12 interconnected buildings on a 39-acre campus that also houses the health department’s 1200 Bay-area staff members, including key laboratory customers, such as state epidemiologists. Kimsey said, “There are lots of advantages to that [co-location]: morale, communications and operational efficiency.”

The state public health laboratory itself actually comprises seven separate laboratories: two environmental laboratories, two infectious disease laboratories, a newborn and prenatal screening laboratory, a food and drug laboratory and a central services laboratory. Collectively, these facilities cost $200 million and can accommodate 500 workers.

The sheer size of the state laboratory—which boasts, for example, five BSL-3 suites—may come as a surprise to those in less populous states. As Kimsey points out, “States like New York and Florida and California have more people and larger public health infrastructures, so there’s a bit of a proportionality.” California, after all, is home to 37 million residents and has the world’s fifth largest economy, surpassed only by the United States, Japan, Germany and the United Kingdom. The state population is so diverse that the Los Angeles County school district must contend with over 120 different languages.

The primary mission of the state PHL is to serve California residents by providing reference testing for the state’s 38 independent local public health laboratories in county health jurisdictions. “We like to describe it as the California PHL Network,” said Kimsey. Again, the scale of the network is somewhat outsized, containing 15 Laboratory Response Network confirmatory laboratories.

But California is notable on other counts as well. The state is well known for having public health standards that exceed those of the federal government, especially related to pollution control and food quality. Kimsey noted that some of California’s environmental standards probably pre-date corresponding federal standards. This may explain why the state public health laboratory has significant involvement in farm-to-table issues and a focus on indoor air quality, both of which are rare among public health laboratories.

Currently, the state is at the forefront of a movement toward more proactive disease control. Kimsey explained that “when you’re looking at the significant time lapse from the first physician visit to diagnosis, one of the new ideas is that governments make just the ordering of certain tests reportable to state health authorities before waiting for the test results.” California health authorities are in the process of implementing this requirement for the H5N1 influenza test. Epidemiologists can then begin follow-up with physicians immediately to determine why they suspect a patient is at risk for avian influenza.

Kimsey, who became director in 1997 after doing research for some years at the Massachusetts Institute of Technology and the University of California at Davis, has nearly completed all of his initial major goals. “When I was appointed,” he said, “my supervisor said I had no higher priority than the construction and the move,” both of which are complete. A concurrent priority for the past seven years has been implementation of a laboratory information management system (LIMS), a task that will be completed this summer (using STAR LIMS). “Prior to this effort,” said Kimsey, “no two of our labs, if they had a LIMS, had the same LIMS.”

As in many states, staffing has become the new focus. The state public health laboratory staffing level has fallen between 10% and 15% in each of the laboratory units over the last ten years. Kimsey said recruitment is a challenge “even at the lowest levels of bench tech and laboratory assistants, but it gets harder the further up you go.” He blames part of the problem on salaries. “We routinely have scientists leave our facility and go down the street to a county lab or a place like Kaiser Permanente or a biotech company and they’ll make $20,000 or more per year. I don’t want to say that we’re grossly under-staffed, but that staffing is a challenge for us.” Now that the state has invested so heavily in the laboratory’s physical infrastructure, Kimsey is pushing for a comparable investment in the human infrastructure.

Other priorities for this California native and Napa Valley vintner are implementing the new all-hazards risk assessment module and simply “keeping this a world-class facility,” a task big enough for anyone.
‘All Kinds of Things’ Happening in CA PHL

Paul Kimsey says that the seven colocated public health laboratories that he directs are “doing all kinds of things.” Here’s a sampling, in his words.

**Food and Drug Laboratory**

“The food and drug laboratory has a state responsibility for food and drug product safety and works with the USDA and FDA on food recalls and food safety investigations. That’s a little bit unique. Generally speaking, the dividing line between food safety issues is that the federal government handles the farm-to-table part of the food chain and public health gets involved when the food is on the table and someone gets sick. This laboratory cooperates with federal, state and local agencies in looking at the farm-to-table issues. I think historically this work started because we’re such an agriculturally intensive state. We also get called in to do analyses on herbal supplements that are implicated in consumer illnesses or injuries. At various times, we’ve found high levels of lead in imported candies. The lab also regularly tests shellfish for Domoic acid, a dangerous toxin that causes shellfish poisoning.”

**Newborn & Prenatal Screening Laboratory**

“This laboratory assures the quality of newborn screening testing for 500,000 infants each year. The screening is done by eight contract labs across the state. Confirmatory is done by either contract reference testing laboratories or by our own laboratory. Last summer a new state law went into effect expanding the panel of standard newborn screening tests to include tandem mass spectrometry testing for 35 genetic conditions.”

**Laboratory Central Services**

“Central Services provides centralized specimen receipt and handling, purchases and maintains laboratory animals and performs all the glassware washing, hazardous waste disposal and media preparation. This spring, we expect to receive an all-hazards risk assessment module, which will be exterior to the main laboratory. This is where unknown, potentially hazardous samples will be assessed for the presence of toxic chemicals, radioactivity and select agents and made safe before being brought into the main facility where we can conduct simultaneous chemical and biological analyses.”

**Environmental Laboratories**

“This is where our sanitation and radiation testing is done. The environmental laboratories constitute the drinking water reference laboratory for the state under the EPA primacy rules and are part of a network of water analysis laboratories monitoring the public water supply for the introduction of chemicals or toxins. This facility also oversees 12 sites across the state where sensors have been set up to detect low-levels of ambient radiation. After the Chernobyl nuclear accident, for example, they were picking up and monitoring the levels of radioactivity coming across the Pacific into the United States.”

**Environmental Health Laboratory**

“The environmental health laboratory is the reference laboratory for the blood lead testing program in California and Viral & Rickettsial Disease Laboratory

“This laboratory handles all of our viral disease diagnostic work. They do West Nile virus testing. They do influenza surveillance. And they have been involved in pandemic flu preparations. We’ve calculated that between 10,000 and 13,000 people a day fly into California from areas that we know have endemic bird flu. If physicians report that a flu patient has traveled to any of these countries with bird flu, we type that virus to assure it’s not H5N1. Since February 2004, we’ve ruled out three dozen flu isolates as not being the H5N1 strain. The VRDL is also involved in international surveillance as part of the World Health Organization’s influenza monitoring network.”

**Microbiology Disease Laboratory**

“The MDL turned 100 years old last year. The laboratory was originally housed in the basement of the old Hygiene and Pathology building on the University of California campus in Berkeley. It got its start with scientists doing plague work just prior to the 1906 earthquake. Plague, as you may or may not know, is endemic in California and we’ve been testing for it for 100 years. The MDL is the classic public health laboratory. It handles all our bacteriological diagnoses, food outbreak microbiology testing and environmental microbiology testing. They do all the shellfish monitoring for marine biotoxins—like the red tide and Domoic acid. A special pathogens unit here performs all of our white powder testing for the FBI. For the past 15 years, this laboratory has provided all the Salmonella serotyping test reagents for the whole country.”

“ The state is well known for having public health standards that exceed those of the federal government, especially related to pollution control and food quality.”

Issue 3, May-June 19
When is a Grouper Not a Grouper?

Florida Bureau of Food Laboratories Has Heavy Focus on Consumer Services, Emergency Response

Director

Yvonne Hale, director of the Florida Bureau of Food Laboratories, is a former Air Force brat who attended 12 different schools. As an adult, she has long considered Florida home. Hale studied biology at Florida State University, community health at the University of North Florida and public health at the University of South Florida, where she is now a PhD candidate. Most of Hale’s professional life has centered on the Florida public health laboratory in Jacksonville, where she spent 21 years doing everything from parasitology to TB testing. During that time, Hale honed her quality assurance (QA) skills both on-site and abroad, providing technical assistance to laboratories in El Salvador (as part of the APHL Hurricanes Mitch & Georges project) and in Ivanovo, Russia (as part of a CDC team). “The laboratory experience really paid off to be able to work on these international projects,” she said. When a QA position opened within the Florida Department of Agriculture and Consumer Services (DACS) in the laboratories of the Division of Food Safety, Hale applied and was brought onboard. Three years later, in early 2005, she was promoted to head the Bureau of Food Laboratories, one of three bureaus within the Florida Division of Food Safety.

Location

The three Division of Food Safety bureaus—Food Laboratories, Chemical Residue Laboratories and Food and Meat Inspection—are in Tallahassee, also home to Florida State and Florida A&M universities and the state legislature. “Our population changes depending on the season,” said Hale.

Facility

The 10,000-square-foot Bureau of Food Laboratories occupies two of ten buildings in a DACS laboratory complex. The Bureau of Chemical Residue Laboratories takes up two more buildings, and Bureau of Food and Meat Inspection is located in a separate administration building. The whole complex, said Hale, is more than 30 years old and constantly being upgraded. So far, just the HVAC system has been completely revamped. “For Florida,” Hale said, “air conditioning is a major issue, and it is especially important in a laboratory setting.”

# Staff

30

Revenue

“The food and meat inspectors are our direct customers,” said Hale. “We work for the inspection unit.” Thus, the bulk of the bureau’s funding comes from permits issued to grocery stores and other food vendors. Fee-based revenue is supplemented by state funding and grants from the USDA and the FDA, as well as redirect money from CDC bioterrorism grants.

Distinguishing Characteristics

- A heavy focus on emergency response and laboratory integration. Having been hit by anthrax and by several major hurricanes, Hale said, “our state’s been very proactive in preparing for emergencies.” The state Department of Health, for example, checks the messages received by the Department of Agriculture consumer complaint line on a weekly basis. There is a memorandum-of-understanding between the Florida commissioner of agriculture and secre-
tary of health “to provide lab support in either direction,” and there has been cross-training among laboratorians in both state departments. Hale said, “If we needed to go to the Tampa health laboratory to work, my staff already knows those people and are familiar with that facility.” The Division of Food Safety is also an active participant in the evolving statewide laboratory response plan. In January, the state conducted a tabletop exercise simulating a foodborne outbreak. In addition to the state food safety and public health laboratories, the exercise involved state health officials, grocery stores, restaurants and half a dozen federal agencies. “If we’re prepared for emergencies, it helps us no matter what the cause; criminal or natural.”

- One of the few food safety regulatory laboratories in the Laboratory Response Network.
- A member of the Food Emergency Response Network (FERN).

“Accreditation is “not just about quality assurance, but quality improvement. When staff start seeing the need for improvement from the bench level, it’s really good. And we are seeing that happen now.”

**Highest Volume Testing**

The laboratory tests over 12,000 food samples each year, conducting roughly 58,000 analyses. Because 12,000 samples “is not that much compared to the volume of food on the shelves,” testing is targeted to items suspected of contamination and food sold by vendors with a history of safety violations. “A lot of our work,” said Hale, “is chemistry. We look for undeclared allergens or preservatives like sulfite. We look for economic adulteration, such as watered-down orange juice. We look for mercury decomposition—from a blue marlin that had not been adequately stored. “We had to locate the distributor of the fish and go to the source of the fish in Costa Rica. That was just one large fish.” Hale said, “This was a good example of everyone working together. None of us stands alone around here.”

**Biggest Challenges**

“One of our biggest challenges is to stay current with the new technology and to train staff to go from conventional microbiology to instrumentation.”

**Notable Success Stories**

- Securing state funding for the department’s first BSL-3 suite and for four positions to work on counter-terrorism.
- Opening the laboratory’s first BSL-3 suite.
- Successfully responding to foodborne disease incidents. In 2003, for example, members of a film crew in Miami and patients at an eating disorders clinic on the Gulf Coast of Florida developed similar symptoms, indicative of food poisoning. The Department of Agriculture identified the source of illness as a histamine—a byproduct from decomposition of a blue marlin that had not been adequately stored. “We had to locate the distributor of the fish and go to the source of the fish in Costa Rica. That was just one large fish.” Hale said, “This was a good example of everyone working together. None of us stands alone around here.”

**Goals**

- Bringing new technology online to assure compliance with food safety regulations within the state. Hale plans to upgrade testing for mycotoxins and to add a) antimicrobial susceptibility testing, b) chemical analyses for shellfish and marine toxins and c) microbiological testing for norovirus, Hepatitis A and emerging organisms such as *Campylobacter* and *Enterobacter sakazakii*.
- Developing and implementing in-house methods to use PCR testing and DNA sequencing for fish speciation. “Down-range, we’d like to do identification of cooked seafood.”
- Upgrading the laboratory information management system (LIMS). “We upgraded our current LIMS in 2000 and it’s now becoming obsolete. This is a priority within the next two to three years. Our division is very proactive; we don’t like to wait until problems arise.”
- Achieving—and then maintaining—International Standards Organization (ISO) accreditation this summer. Accreditation is “not just about quality assurance, but quality improvement. When staff start seeing the need for improvement from the bench level, it’s really good. And we are seeing that happen now.”

**# Vacancies**

Five positions are being held vacant in anticipation of cuts in the USDA Microbiological Data Program budget.
Committee Develops Benefits for New Constituencies

As of March, APHL represents over 600 institutional and individual members from environmental, agricultural and food safety laboratories, state and local public health laboratories, as well as other public health settings. The APHL Membership and Recognition Committee is working to serve these diverse constituencies by identifying their respective needs, tailoring appropriate benefits and promoting opportunities for involvement in association activities.

To date, the committee has concentrated on developing benefits for environmental and local public health laboratories, constituencies with a significant number of member prospects and a clear interest in APHL membership. New benefits and opportunities are listed below:

Dedicated Forum at APHL Annual Meeting: Beginning at the 2006 annual meeting, APHL will sponsor a forum for local and associate institutional members. The 2006 meeting will offer a round table session on topics of interest to both local and associate institutional members, including media relations, advocacy within state systems, and perchlorate in the environment. In subsequent years, APHL will host separate sessions for local public health and associate institutional members.

Training & Leadership Development: APHL will open laboratory director orientation, regional forums, media trainings and other programs sponsored by the National Center for Public Health Laboratory Leadership to new member groups. In addition, it will work with NLTN staff to assess new member training needs and develop appropriate educational programs.

Quarterly Calls: APHL will initiate quarterly conference calls for directors of member local public health laboratories. The calls will provide a venue for discussion of common scientific, policy and administrative issues. Initiation of regular conference calls is under discussion by other member groups.

Expanded Coverage in APHL Publications: APHL now includes a profile of a local or associate institutional lab in each issue of the Minute and is developing Web content to demonstrate the contributions of its new member constituencies.

Also under discussion are benefits such as laboratory capabilities surveys and expansion of the APHL advocacy agenda to incorporate issues of concern to new member laboratories.

In addition to developing new benefits, the membership committee aims to increase the number of members active in APHL activities. A new page on the APHL Web site consolidates information on volunteer opportunities, ranging from committee participation to technical assistance in under-resourced countries to official representation on advisory boards and forums. New requests for volunteers will also be posted at www.aphl.org/about_aphl/membership/member_involvement. Also in FY 2007, APHL will phase in follow-up calls to new members to encourage participation and seek input on their expectations of membership.

Do you have a colleague who could benefit from membership in APHL? Send them an email with a link to our summary of membership benefits or give them a copy of the APHL membership brochure. For copies of the brochure and additional information, contact Anna Dillingham, membership manager, at anna.dillingham@aphl.org.

New APHL Institutional Members

APHL offers institutional memberships to state and local public health laboratories, as well as state environmental and agricultural laboratories. Please join us in welcoming our newest institutional members:

Public Health Institutional—Local Members

Long Beach Public Health Laboratory, Miriam Lachica, MA

Southern Nevada Public Health Laboratory, Patricia Armour, MT(ASCP)

Associate Institutional Dues to Remain at $500 in FY 2007

Dues for Associate Institutional members will remain at a flat rate of $500 for fiscal year 2007. The APHL Board of Directors approved an extension of the $500 rate for one more year to encourage environmental, agricultural and food safety laboratories to become involved in the association. The one-year extension also gives APHL an additional year to develop targeted benefits for new constituencies. If you have questions, contact Anna Dillingham, membership manager, at anna.dillingham@aphl.org.

Board Update

In March, APHL’s Board of Directors convened a two-day meeting at the association headquarters in conjunction with Hill Day activities in Washington, DC. They approved the Workforce Policy and the Performance Standards Policy, which are now before the association’s membership for final acceptance. The board also approved a plan from the Environmental Health Committee to address the National Environmental Laboratory Accreditation Conference (NELAC) and the Competency Task Force’s recommendations for core competencies for several lab positions. The board reviewed membership dues and approved a motion from the Membership & Recognition Committee to keep the Associate Institutional member dues at $500 for the next year to assist recruitment. The board also reviewed a report from the development team to increase revenue through new conferences on preparedness and laboratory information management systems. Finally, the board prioritized the objectives of the 2006-2009 strategic plan to aid staff efforts to complete the 2006-2007 work plan by June. For more information on the meeting, contact Shawna A. Webster, manager of the executive office, at shawna.webster@aphl.org.
Yet another fiscal year is coming to a close, but not neatly—I think we can guarantee that the world of public health laboratory science and practice will never be that simple. We’ve seen a resurgence of mumps, escalating antimicrobial resistance and funding shortages—yet, we’ve had our share of successes as well.

One of these successes is the solidification of the relationship between APHL and EPA. In February, the agency awarded us with a three-year cooperative agreement to address shared environmental laboratory concerns. This pivotal agreement will allow us to increase our value as a membership organization by designing benefits with an environmental focus. With this support, we will be able to do many things that badly needed doing: hire an environmental lab program manager to work exclusively on EPA-related issues, form a subcommittee of environmental laboratory directors to provide advice to EPA and to us, develop training and other learning opportunities. We will craft and administer a capability/capacity survey for state environmental labs, sharing the data and information to help labs identify areas that need strengthening.

This cooperative agreement supports all of these concrete benefits—and more—but it also makes a statement: APHL is the organization representing government laboratories with a public health mandate. This has long been the vision of our association’s leaders, and for years we have been moving in this direction. We work in a world where often our success hinges on something as delicate as a relationship with other laboratories or other partners. APHL has advocated that that relationship doesn’t have to be delicate, or fleeting, or simply event-based. Laboratories—be they state or local public health, environmental, veterinary, or food safety—share a mandate to protect the public’s health. To reflect this connection, APHL has widened its membership and its scope. Now the EPA has backed this change with an agreement to ensure that APHL forms a solid home for environmental laboratory issues.

Beginning in 2007, APHL will host a two track annual meeting: our standard meeting with a public health laboratory focus, and another track—for environmental laboratories. Our annual meeting is where some of our most productive work is done each year. This addition to our conference schedule will magnify these successes, and will solidify vital relationships between partner laboratories. We share a mission and an association.

This year, our upcoming annual meeting is themed “Public Health Laboratories in the Global Environment,” and will be held in Long Beach, CA. It is designed to cast light on the public health markers of the past year, including the tragedy and lessons of Hurricane Katrina, the threat of an influenza pandemic, and the renaissance of laboratory informatics. We received more abstracts than ever before, and anticipate it to be one of our best meetings. If you have not yet made plans to attend, please check www.aphl.org/conferences/2006_aphl_annual_meeting.cfm for more information.

And finally, it is important to note that the end of the fiscal year brings a changing of the guard. I would like to express tremendous appreciation to Kati Kelley, our able president, for guiding the association through a myriad of challenging public health events. The board of directors has done an outstanding job as well, donating enormous amounts of time to make crucial decisions on behalf of the entire association.

Looking ahead, we welcome our incoming president, Delaware’s Dr. Jane Getchell. I have no doubt that the association will continue to make strides forward in the upcoming year—making itself a nexus of communication and information for our members, developing strong relationships with federal agencies, and monitoring actions-of-interest in Congress—and that we will inevitably also face surprising, worrisome and unusual developments in our aim to keep the public healthy.

See you in Long Beach.
The Institute of Medicine has published *Ensuring an Infectious Disease Workforce*, which includes a chapter authored by Scott Becker, MS, APHL executive director entitled, “Training and Sustaining the Public Health Laboratory Workforce: Our First Line of Defense Against Infectious Disease.”

Wilma Brooks resigned from her position as development director in March.

Laura Dice joined APHL in March as the environmental health program intern. She is finishing her master’s in public health at George Washington University.

James Ford resigned from his position as laboratory systems and standards manager in April. APHL congratulates him on his acceptance into a master’s in business administration program at Rutgers University.

Heather Green, MS, PhD, joined APHL in May as food safety program manager. Green is currently completing a post-doctoral fellowship at the University of Maryland’s School of Medicine. She earned her MS in epidemiology from the Harvard University School of Public Health, and her PhD in biomedical science from New York University.

Ina Goocjaran, MS, joined APHL as the new director of human resources in May.

Heather Roney, MA, continues to serve as fellowship program manager despite relocating to California in April.

Rhonda Stewart joined APHL as the new accounting clerk in April. Stewart is currently pursuing a BS from Southeastern University.

Ralph Timperi, MPH, accepted the position of director of the global health program in March. Timperi was serving as acting director of the program.

Shari Rolando, MHS, MT(ASCP), was recently promoted to senior manager for food safety, a program that now falls under infectious diseases. Rolando was formerly the PulseNet program manager for APHL. Rolando has also been selected for recognition by NCID in the “Partners in Public Health Improvement – External” category. APHL congratulates her.

### APHL Sustaining Member Program

The following corporations partner with APHL to support the nation’s public health laboratory systems.

#### Diamond Partners
- GEN-PROBE

#### Platinum Partners
- Abbott Diagnostics
- Smiths
- Applied Biosystems
- sonicfoundry
- Cepheid
- STARLIMS™

#### Gold Partners
- BD
- Bio-Rad
- Labware LIMS Solutions
- USPS

#### Gold Partners
- ChemWare Automated Laboratory Solutions