Linking Laboratories One by One to Strengthen America’s Emergency Response System

Janis Thompson worked as a medical technician in a hospital laboratory for twenty-five years, followed by seven years as an infection control practitioner. In all that time, she said, she and her hospital colleagues “knew very little about what the state public health laboratory did.” Aside from regulatory inspections, “I thought that all they did was (test) a few clinical specimens,” she recalled.

Unfortunately that perception has been all too common among laboratory workers who are professionally removed from the world of public health. Today, as a training coordinator and program advisor for the Arkansas Department of Health laboratory, Thompson is part of a nationwide effort to reverse those prevailing misperceptions and build statewide laboratory communities that will collectively comprise what has come to be known as the National Laboratory System (NLS). (See page 4.)

As with many recent public health laboratory initiatives, the push for the NLS was accelerated by fears of biological terrorism: almost simultaneously, laboratory leaders envisioned the Laboratory Response Network (see page 5). Quite simply, the first sign of a covert release of smallpox, plague or other high-consequence agent is likely to be sick people. And the bulk of infectious disease testing performed in the US is not done in public health laboratories, but in clinical laboratories that are either affiliated with hospitals or see patients (or patient specimens) forwarded by private physicians.

While every state requires physicians and laboratories to report certain infectious diseases to public health authorities, historically the overall level of disease reporting has been low—perhaps as low as ten percent, according to Toby Merlin, the associate director for laboratory medicine in the CDC’s Division of Laboratory Systems (DLS). Better connectivity among laboratories is expected to improve both disease reporting and the referral of disease isolates to public health laboratories for detailed analyses, including molecular comparisons of organisms infecting different patients to discern whether there is a common source of infection.
Dear Members,

I hope you have all had a pleasant summer with some relaxing time away from work.

In the last issue of this newsletter, I wrote about the increasing importance of intrastate coordination among laboratories. I’d like to take up that flag again this month, especially in light of the approaching annual meeting. This co-located annual meeting with the Association of State and Territorial Health Officials, “Communication, Cooperation, Coordination: Building Bridges in Public Health,” will highlight many of the key relationships that we all have within our states and with other public health laboratories. Some of the sessions that you can anticipate in St. Paul, MN, in September: “Building Bridges With Sentinel Laboratories – Foundation for the National Laboratory System,” “Integration of Current Laboratory Networks,” and “Public Health Laboratories – Working to Improve Health Abroad and Enhance Our Partnerships at Home.”

This issue of the Minute contains a number of articles that focus on how essential “connectivity” is to public health practice. In particular, coordination is important for the success of all the national emergency preparedness programs that have a laboratory component—such as the Laboratory Response Network, the Food Emergency Response Network, BioWatch, the Biological Detection System (to name a few!). In a number of states, the public health laboratory director has had to use his or her connections to convene other laboratory and agency directors to assist in these efforts.

In California we now have a quarterly meeting of laboratory directors from governmental (federal, state, county and city) laboratories that we call the Interagency Laboratory Working Group (ILWOG). This group started out two years ago without a name and with only a goal to sort out all the federal programs with laboratory components and local impact. The first meetings brought together four agencies; now we routinely have a dozen or more participate. Key players have been the state public health laboratory (the convener), the civil support team, county and city public health laboratories, the Lawrence Livermore National Laboratory and the local Environmental Protection Agency laboratory. The group has expanded its agenda to include anything that is of interest to our working group members. This has included—but is not limited to—LIMS, data exchange issues, surge capacity, reporting relationships, call down lists and transport of specimens.

Why has this group been successful? Several aspects have worked well for us: the informal nature of the meetings, the ten-minute agency updates on what’s new, the laboratory science orientation of the agenda, and the rotating location (each meeting is hosted by a different agency, which then provides a laboratory tour of that facility).

Each state public health laboratory has its own success stories. Many of these are translatable to other states. And one the best ways to learn what has worked for others is to attend our APHL meetings (when possible), to participate in our committee structure and to reach out to your colleagues. I hope to personally welcome you at the 2004 annual meeting at the end of September.

Sincerely,

Paul Kimsey, PhD
EXECUTIVE DIRECTOR’S NOTE
Sharing Innovations, Best Practices

Dear Members,

Ever since the tumult following 9/11 and the 2001 anthrax attacks, APHL has routinely conducted a “lessons-learned” meeting after association events such as board meetings, conferences and symposia, as well as after the conclusion of large-scale projects. Equally important, we began to take stock of our actions whenever we found ourselves in response mode—whether to the FDA’s unexpected seizure of newborn screening kits or to the highly publicized release of the March of Dimes’ newborn screening recommendations. (See “State of the States” on page 12 for more on this.)

Taking the effort to track these small successes and failures has helped us understand how much we value and rely upon our collaboration with other national organizations, especially when we are in the midst of acting on behalf of members. Because we also rely on member input, this process has helped us recognize just how resourceful our members are, especially when it comes to sharing their laboratory innovations and practices. It’s rare that a monthly committee call (any committee, you name it!) won’t somehow include some focused or sidebar discussion about how one laboratory has solved such and such a problem... only to have other members ask “hey, can I call you about that after this call is over?” Invariably the answer is yes.

In order to capitalize on this wonderful spirit of sharing, APHL has recently awarded funds through two small grants programs that are supported by our cooperative agreement with CDC: “Public-Private Laboratory Integration” and “Implementing Food Safety Recommendations in States.” The first program will help implement innovative project activities that encourage greater public-private laboratory integration, building on the lessons learned from the APHL/CDC National Laboratory System (NLS) demonstration project. For this program, the effectiveness of the enhancements to a state laboratory system will be measured by an increased degree of communication, cooperation, and/or coordination between public health laboratories and private clinical laboratories to address public health threats such as infectious, environmental, or unknown agents of public health concern.

The second program, “Implementing Food Safety Recommendations in States,” allows states to improve the food safety capacity of their public health laboratories by implementing recommendations from APHL’s report, A Recipe for Stronger Food Safety Testing Programs. Some of the funded activities will serve as pilot projects to test their fitness for national use in food safety.

You will find further information about these projects elsewhere within this edition of the Minute, but I encourage you to visit our Web site over the next few months. We are creating a new section on the Web to catalog innovative practices in public health laboratories—the new section will appear under the heading “Working Smarter” and will be regularly updated.

The most important lesson we have learned is that we are not alone. There is an entire community of public health laboratory practitioners waiting to help out—you just have to ask.

Sincerely,

Scott Becker, MS
THE NATIONAL LABORATORY SYSTEM: A WORK IN PROGRESS

Ask laboratory leaders, and they will tell you that there is no National Laboratory System (NLS) per se, despite the oft-repeated moniker. Instead, what exists is an ongoing effort, partially funded and otherwise supported by the CDC’s Division of Laboratory Systems (DLS), to create well-coordinated networks of laboratories in every US state—in essence a national laboratory system. Although the impetus for the project was the need to link private medical laboratories and state public health laboratories to speed the detection and reporting of possible bioterror agents, its scope has expanded significantly. Just this year the DLS—through APHL—awarded roughly $50,000 to each of ten states to carry out specific activities to increase the level of cooperation between the state public health laboratory and a defined subset of laboratories, ranging from hospital labs in Arkansas to water testing labs in Minnesota. While this dedicated support (and past support to NLS pilot projects in Michigan, Minnesota, Nebraska and Washington in 2000) has been a stimulus for innovation, all state public health laboratories— with or without DLS funding— are working toward the same overarching goals.

Innovative Measures to Increase Connectivity

Laboratory program advisors like Thompson recognize the benefits of enhanced laboratory integration as well as the barriers. “Some of the labs have been very receptive (to overtures from the state laboratory),” she said. “Others are more prone to take a wait-and-see approach. Is this going to be regulatory or is it actually going to be beneficial to our laboratory?”

To enhance connectivity, Thompson is planning distance-training workshops in laboratory techniques, dissemination of real-time disease surveillance data via a Web site and newsletter, and periodic teleconferences with hospital laboratory staff to discuss common concerns.

In Massachusetts, John Fontana is working on a project intended to strengthen ties between the state public health laboratory and hospital laboratories while simultaneously addressing a long-festering public health problem. Fontana, who directs molecular surveillance activities for the Massachusetts State Laboratory Institute (MSLI), is interested in “giving information back to hospitals” to help them better identify and control a community-associated strain of Staphylococcus aureus that is resistant to methicillin treatment. The problem of methicillin resistant Staphylococcus aureus (MRSA) is something “we’ve been staring in the face for years,” said Fontana. “It’s just not going to go away. It’s going to get worse.”

Fontana plans to collect MRSA isolates and associated clinical data from hospital laboratories— starting with the University of Massachusetts Memorial Medical Center— and subject them to advanced testing that is beyond the scope of routine hospital testing. The goal is to build a database of MRSA pulsed field gel electrophoresis (PFGE) patterns (essentially DNA fingerprints of the organisms) and drug susceptibility profiles that will help individual hospitals distinguish community-associated MRSA from healthcare-associated MRSA and to detect trends in disease prevalence and drug resistance. “We’ll do the PFGE and the analysis, but we’ll give (the hospital laboratories) the image database and training so they can monitor MRSA by ward or patient or employee. They can know what’s in their hospital and keep track of it.”

Some of the labs have been very receptive (to overtures from the state laboratory).

Others are more prone to take a wait-and-see approach.

–Janis Thompson

Fontana hopes the hospital laboratories will come to recognize the MSLI as a resource and will ultimately improve MRSA case reporting.

Although Fontana and Thompson have dedicated grant money to pursue their laboratory integration projects, virtually all state public health laboratories are pursuing similar kinds of activities, ranging from shared public-private specimen courier systems to formal agreements to share laboratory space during emergencies that create a surge in demand for laboratory tests.

Joyce Schwartz, the chief laboratory officer for Quest Diagnostics—one of the nation’s largest commercial laboratories— well understands the assets that public and private sector laboratories can offer one another. “We touch the
vast majority of practicing physicians in the country between all the commercial labs,” she said. “It’s the benefit of our access that will hopefully lead the public health agencies to work more closely with us.”

On the flip side, Schwartz would like public health laboratories to “off-load more mundane tests” (such as complete blood counts) to commercial labs and to share epidemiological data and validated assays for tests for emerging illnesses like SARS.

But Schwartz’s viewpoint may still be the minority opinion among private sector, clinical laboratory workers. David Sundwall, president of the American Clinical Laboratory Association (ACLA), said, “We’ve made the case, at least for ACLA members, that we don’t look at our work as competing with public health in any way.” Yet he said, “There is a history of collaboration with (public health laboratories and) individual (private) labs, but they are exceptions, not the rules.”

Centralization May Be Key
At the national level APHL, CDC, the ACLA and other partners are working on a number of projects to support state laboratory integration efforts. Perhaps the most popular of these is an effort to create a common, mechanized form that can be used in all state and local jurisdictions to detail the detection of a reportable illness, thereby replacing the multiple forms now in use. The CD C’s Merlin, who is heading the effort, said a standard form will “lead to better reporting and make it easier on the labs that do the reporting: a classic win-win situation.”

A second CDC project is the creation of the National Laboratory Database, which will eventually list all of the clinical laboratories in the country certified under the Clinical Laboratory Improvement Amendments of 1988. It would allow users to search for subsets of laboratories by location, type of testing performed, or other characteristics.

Just this summer the CDC will release findings from a national, formative evaluation of laboratory integration efforts. Based on surveys and personal interviews with public and private laboratory staff, the agency found that having a full-time person to coordinate activities with laboratories outside the state health agency made a huge difference in the level of integration achieved. Eunice Rosner, a CDC health scientist who monitored the evaluation process, noted that a variety of outreach activities— including electronic communication systems, dissemination of new microbiology information, and sending unknown specimens to clinical labs for identification— “all worked pretty well.” But, she said, “just having a person working with (the clinical laboratories) seems to be the main indicator of success according to preliminary results; if something comes up, clinical labs have a known person to contact.”

THE LABORATORY RESPONSE NETWORK: READY FOR THE WORST
APHL and CDC established the Laboratory Response Network (LRN) in 1999 to improve the nation’s ability to respond to terrorist acts and other public health emergencies. Unlike the nascent National Laboratory System, the LRN has a well-defined operational plan and structure. The network is overseen by the CDC’s Bioterrorism Preparedness and Response Program and has three categories of members. A handful of national laboratories operated by the US military, CDC, and other federal agencies have the ability to identify specific strains of the most virulent and highly infectious agents. About 100 reference laboratories, including all state public health laboratories, can definitively confirm the presence of a threat agent, thereby initiating a chain of response. And thousands of clinical laboratories— those that have direct contact with patients— are responsible for identifying suspicious specimens and referring them to a LRN reference laboratory for a reliable diagnosis. Perhaps the network’s greatest asset is quality control: all reference and national members must meet stringent requirements for equipment, personnel and use the same validated protocols, giving test results a high degree of accuracy and comparability. Moreover, new tests are continually being brought on-line in anticipation of threats such as SARS and viral hemorrhagic fevers. Since its inception, the LRN has received over $160 million in federal funding.
Dear Readers: In an email response to a Minute article, Emeritus member James Prier wrote to APHL’s executive director, Scott Becker, to enumerate several important points on public-private laboratory integration. This topic is addressed further in the current issue’s front-page article, and we thought it timely to share Dr. Prier’s insights. APHL welcomes such letters from members.

Dear Scott,

As usual I find the issue of the Minute one of the few publications I see regularly that always has matters of interest. The project of public-private [laboratory] integration is of particular interest, since I have spent time as a director of both types.

There are, I believe, two essential elements that are not indicated in the APHL Minute article “Public-Private Laboratory Integration Project 2004,” July-August 2004. One is the reality that this should not be a one-sided approach because the private laboratories have a great deal to teach public laboratories, as well as vice-versa. If a public health laboratory does not comprehend the business of a private laboratory, whether independent or hospital, it will be at a great disadvantage in attempting any significant integration.

The second point is that an important procedural issue is that direct and personal contact between the two is essential before enough factors can be accumulated to effect significant integration of functions. Both state and local public health laboratories in such jurisdictions as New Jersey, Pennsylvania, California, Wisconsin and Florida have done this in the past. Some important guidelines might be obtained from these jurisdictions to establish protocols for pursuing the objective in addition to the specific assignments now in effect in the project.

Just a thought from someone who believes this to be a most important APHL project.

Best regards,
James Prier, DVM, PhD

Forging More Than Just Clinical Connections
Increasingly the scope of laboratory integration efforts is expanding to new realms. Public health scientists realize that animal illnesses or contaminated soil or reservoirs are just as likely to signify biological or chemical terrorism—or other potential public health crises—as human illness.

Tony Sambol, assistant director and program advisor for the Nebraska public health laboratory, recalled an incident that occurred this summer involving a dead rabbit in Lincoln. The state veterinary science laboratory suspected that the rabbit was infected with Francisella tularensis: a naturally occurring animal pathogen that is transmissible to people and is on the CDC’s Category A (highest priority) list of possible bioterror agents. The veterinary science laboratory contacted a public health veterinarian, who in turn alerted the state epidemiologist. The state public health laboratory confirmed the original diagnosis and reported back to relevant health authorities, which eventually determined that no one had been exposed to the rabbit. “This working together is why we do these (laboratory integration) projects,” Sambol said.

Sambol is overseeing a project to extend the use of a device, called STATPack®, to enable secure, real-time video transmissions of laboratory images. Alpha testing has been completed and five hospitals are working with the state public health laboratory as Beta test sites. “Now,” said Sambol, “we want to reach out beyond.” The plan is to implement the STATPack® system in four new venues: the veterinary diagnostic laboratory at the University of Nebraska-Lincoln, the hospital laboratory at Offutt Air Force Base, the food testing laboratory at the Nebraska Department of Agriculture and the state water testing laboratory.

Based on surveys… having a full-time person to coordinate activities with laboratories outside the state health agency made a huge difference in the level of integration achieved.

If one of these facilities has “a colony (of organisms) that they believe might be Bacillus anthracis, they could send a video picture with all the pertinent facts of the
case to the state public health lab," said Sambol, thus speeding confirmatory diagnosis and emergency response activities. Moreover, he noted, “in the middle of the winter when the interstates are icy and closed, now we have another method to provide consultation.”

Connection with diverse types of laboratories “is just another aspect of preparedness,” said Sambol. “You don’t know if (an infectious or toxic agent) is going to be in the water, food, or livestock.”

Minnesota’s Louise Liao, who manages the state public health laboratory’s environmental testing program, is focused on water. The public health laboratory certifies many of the state’s private and municipal water testing laboratories, but “because (certification) is fee-based and because it’s regulatory, it does not have a flavor of collaboration,” explained Liao.

The public health laboratory would like to work more closely with these environmental testing laboratories, which have their own professional networks for staff development and quality assurance but have expressed interest in workshops to address common deficiencies in analytical techniques. “It’s a lot easier to do an inspection when the lab is already doing everything right than to punish them when they’ve never been trained,” said Liao.

The carrot for collaboration is training in E. coli testing. Environmental testing laboratories routinely test for the presence or absence of E. coli in drinking water—where even minute amounts of the fecal coliform are not allowed—but are eager to learn to quantify the amount of E. coli in swimming beach water—where anything under 200 to 235 colony-forming units per 100 milliliters water is considered safe. Liao explained that “just in the past two to three years, there’s been tremendous interest in swimming beach water nationwide. In a couple years, the US Environmental Protection Agency will require that swimming beaches be monitored for E. coli . . . and environmental testing labs are eager to provide high-quality analyses.”

In addition to training on the test methods, the public health laboratory will train on the quality assurance systems and, said Liao, “that training will carry over to all of the environmental testing that the lab does on behalf of the residents of the state.”

As with all laboratory integration projects, a hoped-for by-product is greater referral of abnormal test results to the state public health laboratory so that emerging public health threats are identified quickly.

The ultimate goal, Liao said, is “a collaborative relationship where we all benefit from each other’s strengths.”

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**RFP Template for LIMS Now Available**

A Request for Proposal (RFP) template for the acquisition of a Laboratory Information Management System (LIMS) is now available for the APHL membership to use in their LIMS procurement process. Patina Zarcone, APHL informatics and LIM systems manager, along with representatives from 8 member laboratories (Arizona, Alaska, Iowa, Vermont, Washington, Virginia, Missouri, Massachusetts) have created a template RFP that can be customized with state specific procurement regulations and can be used by public health laboratories in their acquisition process. Massachusetts, Iowa and Alaska provided real RFPs for the workgroup to use as examples. For more information or to obtain the template electronically, contact Patina Zarcone at pzarcone@aphl.org or 617.569.9612.

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**See pages 8-9 for articles on the LIMS Design Project, the National Health Information Infrastructure Conference, and LIMS and APHL: A History of Collaboration, Research, and Innovation.**
In August 2004, APHL, the Public Health Informatics Institute (the Institute), and twenty-three state and local public health laboratories launched the final phase of a project to provide the membership with the necessary information to develop long-term strategies for laboratory information management systems (LIMS) solutions. The two-year project, supported by The Robert Wood Johnson Foundation, cost approximately $1.5 million. It is the hope of APHL, the Institute, and the members of the collaborative project that the design project will result in savings to public health laboratories worth many times that amount.

In this phase of the project, the Institute will conduct a detailed analysis of the LIMS market, including forecasted costs, growth, and demand for LIMS, and the strengths and weaknesses of different approaches to LIMS development and purchase. The information will empower public health laboratories to make informed decisions about the options available: build, buy, or collaboratively develop LIMS with other public health laboratories. In addition, it will provide APHL with the information needed to meet its strategic goal of moving public health laboratories to the cutting edge in the capture, processing, and communication of laboratory information vital to public health.

Also in this phase of the project, the participating laboratories will complete the collaborative development of LIMS logical design specifications that meet the needs of all public health laboratories. In previous phases, the project participants have collaboratively defined common requirements and developed design specifications for the most critical LIMS business processes.

“Public health agencies looking to develop effective information systems can no longer afford to work in silos, nor can they afford to leap to the technology solution without first having a common understanding of the health problem and how the work gets done,” said Institute Director David Ross, ScD. “By developing a shared definition of the problem and collaboratively developing the requirements and logical design specifications, APHL and public health laboratories are tackling the problem of redundant health information systems that lack interoperability. The end result of the collaborative requirements and logical design projects will be more effective, more cost efficient LIMS that have better data flow among public health laboratories and to federal agencies, and will improve their capacity for mutual assistance in a crisis.”

The public health laboratory LIMS project began in October 2002 with a group of 16 state and local public health laboratories collaboratively defining common requirements. The Institute provided facilitation and expertise in business processes and requirements development. APHL published the resulting public health laboratory LIMS requirements document, which details 500 requirements, in November 2003. A number of public health laboratories across the country have used the requirements to guide their LIMS development or purchase. A document with the logical design specifications for the most critical business processes, collaboratively developed by public health laboratories in twenty-five states and one city, will be published by APHL in fall 2004. A document detailing the design specifications for the remaining business process will be ready in early 2005.

For more information on these initiatives, contact Patina Zarcone, APHL informatics and LIM systems manager, pzarcone@aphl.org.
National Health Information Infrastructure Conference
Cornerstones for Electronic Healthcare

“The Secretarial Summit on Health Information Technology launching the National Health Information Infrastructure 2004: Cornerstones for Electronic Healthcare” was held in Washington, DC, in July. Over 1,500 people representing the private and public healthcare industry attended the summit. In the opening speech, Health and Human Services Secretary Tommy G. Thompson stated, “Health information technology can improve quality of care and reduce medical errors, even as it lowers administrative costs. It has the potential to produce savings of ten percent of our total annual spending on health care, even as it improves care for patients and provides new support for health care professionals.”

A report, “The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care,” ordered by President George W. Bush in April, was presented by Dr. David J. Brailer, a recent appointee as national coordinator for health information technology. The report lays out the broad steps needed to achieve current, accessible electronic health records for Americans. A fact sheet on the report, as well as a complete list of the four major collaborative goals and twelve strategies for advancing national healthcare IT efforts, can be found at www.hhs.gov/news/press/2004pres/20040721.html.

For more information regarding informatics initiatives at APHL, contact Patina Zarcone, APHL informatics and LIM systems manager, pzarcone@aphl.org

LIMS and APHL: A History of Collaboration, Research, and Innovation

August 2003
APHL makes the PHII LIMS Vendor Assessment available to the APHL membership

September 2003
PHII hands “Public Health Laboratories Take the Next Step: A Collaborative Approach to Laboratory Information Management Systems Design” to APHL

November 2003
APHL publishes “Requirements for Public Health Laboratory Information Management Systems (LIMS)” and APHL/ CDC LIMS Conference “Setting an Action Agenda for Public Health Laboratory Information Management Systems”

April 2004
PHII and APHL co-publish the research brief “Batteries Not Included: Understanding the total cost of ownership for a commercial off-the-shelf public health laboratory information management system”

May 2004
APHL co-sponsors the CDC PHIN Stakeholder’s Meeting “Connecting for the Public’s Health.” Patina Zarcone, APHL informatics and LIM systems manager, co-chairs conference

July 2004
APHL board of directors approves continued partnership with PHII in the Phase II LIMS Design Project

August 2004
Phase I LIMS Design Project documents given to APHL for publication, dissemination, and stewardship
Pushing for State Biomonitoring Programs:

This summer, APHL contracted with the National Conference of State Legislatures (NCSL) to begin educating state legislators about biomonitoring. NCSL is a bipartisan organization that serves legislators of the states and territories; it provides research, technical assistance and opportunities for policymakers to exchange ideas on pressing state issues. APHL has exhibited at four NCSL national meetings, where attendees are often surprised to learn that they have a public health laboratory in their state—a fact that highlights the need for educational outreach efforts.

NCSL convened a roundtable meeting of five states from the upper Midwest biomonitoring consortium on July 14, 2004. Legislators and laboratory directors from Minnesota, Iowa, North Dakota, South Dakota and Wisconsin attended the event, “Meeting Public Health Priorities: Biomonitoring and Public Health Laboratories.” Hosted at the Minnesota Department of Health, legislators particularly enjoyed the tour of the state laboratory. Andrea Lipman, of the CDC, explained the federal role in building environmental capacity in public health laboratories; Mary Gilchrist, director of Iowa’s Hygienic Laboratory, described the role of state public health laboratories in environmental health. Bonna Cunningham (ND) and Louise Liao (MN) covered the upper Midwest consortium’s accomplishments and goals. Then, Glen Andersen of NCSL provided case studies and challenges related to jump-starting state biomonitoring programs, and Nicole Vasquez, staff consultant to the California Senate Health and Human Services Committee, outlined the California biomonitoring bill. She supplied copies of her bill, the first in the nation to explore using biomonitoring to assess exposure to environmental chemicals. At the end of the day, participants discussed what state policies would be needed to achieve biomonitoring.

Ways to Obtain Funding

- Orchestrate grant-writing through partnerships with legislatures and public and private organizations.
- Estimate public employee health insurance impacts, such as effects of secondhand smoke.
- Work with medical and public health schools to begin quantifying prevention cost savings that may result from biomonitoring.

How to Get the Word Out about Biomonitoring:

- Educate legislators.
- Profile a human-interest story that connects West Nile virus and insecticide use to biomonitoring.
- Sell biomonitoring as a “push for the future.”

What Next?

- Adjust biomonitoring/consortium concept from federal to state focus.
- Invite legislators to visit laboratories and create a coordinated biomonitoring plan.
- Consolidate ideas in state and among consortia, with feedback from legislators.
- Get invited to Health, Education, Environment, and Appropriations Committee meetings.
- Start developing state legislation.

NCSL featured biomonitoring in a three-page Environmental Health Series publication (July 2004, Issue 8. See www.aphl.org/EnvironmentalHealth/index.cfm?biomon.), and a one-page issue brief on biomonitoring was created and sent to legislators interested in health issues in all the states. Legislators may reach out to laboratories as a result of this piece, and may have basic questions about the lab and detailed questions about state interests around biomonitoring.

Since windfalls of money rarely occur, a good biomonitoring plan would utilize available resources and require minimal additional costs. It would also demonstrate state needs and priorities and would track national global concerns.

Take the first step: invite a state legislator to tour your lab! For more on NCSL, visit www.ncsl.org.
Discounts Available, Chemical Terrorism Consumables

APHL arranged discounted rates for state public health and accessory items for Atomic Absorption (AA), Inductively Coupled Plasma (ICP) and Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) product lines, as well as selected consumable and minor accessory products in the GC, GC-MS, KC, Thermal, Elemental, IR, UV, Fluorescence and Polarimetry product lines. A minimum purchase of $100 is required for phone orders; there is no minimum order for online purchases.

For information regarding regional and technical assistance contacts, contact Lauren DiSano, ldisano@aphl.org, 202.822.5227, ext. 204.

Environmental Health Committee Meeting

APHL’s Environmental Health Committee held its annual meeting in Washington, DC, on June 10-11. During a strategic planning session, members established a list of issues affecting environmental health, and then prioritized them to clarify the group’s annual work focus. (See sidebar.)

The committee discussed how to address major drives effectively and aimed to resolve the lab-specific environmental health issues. The committee identified more than fifty action items to address these concerns. The goals behind the action items are to aid in the identification of partners, facilitate increased environmental health information-sharing among laboratories, increase technology transfer and communication involving environmental health issues at the federal, state and local levels, clarify the roles of laboratories and individuals involved in environmental health, and facilitate the issuance of position papers on a number of issues, such as the laboratory role in biomonitoring for public health tracking.

EH Committee Priorities

Priority issues:
- Environmental protection
- Emergency response
- Biomonitoring

Additional lab-specific issues:
- Emergency preparedness and response for chemical terrorism
- Clarification of the state public health laboratory role in environmental testing
- Limited general/operational funding for environmental health
- Quality assurance issues
- Meaningful data issues
- Long-range planning for workforce and equipment/facilities
- Development of stronger partnerships with the EPA
- Massachusetts Environmental Public Health Tracking Program.

The committee will also release position statements on priority issues, and is currently drafting a statement on the laboratory role in biomonitoring for public health tracking.

In addition to the planning session, the committee heard a number of presentations on ongoing activities:
- Environmental Public Health Tracking Meeting
- NCEH/ATSDR Advisory Committee Meeting
- Status of environmental health grants, accreditation issues and the Congressional budget.
- APHL’s new membership structure
- Current draft of the Environmental Laboratory Certification Survey
- Biomonitoring Advocacy Project
- EPA Water Alliance Report and current environmental health data exchange issues

For more information on APHL’s environmental health program, contact Jennifer Liebreich, 202.822.5227, ext. 236, jliebreich@aphl.org.
Did you know...?
A Glance at the Numbers

Safe Drinking Water Act Survey
Forty state and territorial public health laboratories serve as the state Safe Drinking Water Act primacy laboratory in some capacity, either for chemistry, microbiology, or both.

Environmental Triage Survey
A ten-question survey administered in May 2004 attempted to assess current preparedness and capacity of state public health laboratories to handle numerous unknown samples, as well as to gauge the willingness of labs to commit funds toward the construction of triage units in the future. Seventy-eight responses were received from FERN laboratories, LRN laboratories, state environmental laboratories, safe drinking water primacy laboratories and state public health laboratories.

83% Eighty-three percent recommended that unknown/potentially unknown samples should be screened for energetics, explosives, radiation and off-gassing of organics/specific hazardous chemicals prior to arrival at a laboratory or triage unit.

28% If a triage unit were available, twenty-eight percent reported expecting to process less than one unknown sample per day. Interestingly, twenty-six percent expected to process more than twenty samples per day.

34% Thirty-four percent would be willing to spend $100,000 to construct a triage unit at their facility; nine percent would spend $250,000; and no respondents would spend $500,000 or $1,000,000.

For additional information, including the complete results of this survey, contact Lauren DiSano, ldisano@aphl.org, 202.822.3227 ext. 204.

Newborn Screening

State of the States:
Newborn Screening Programs Need Funding to Expand Testing
Newborn screening is the process of using a simple blood test to identify many life-threatening congenital and genetic illnesses before any symptoms begin. In the US, state public health laboratories screen ninety-seven percent of the more than four million children born every year for various disorders.

On June 29, 2004, The Today Show featured Dr. Jennifer Howse, president of the March of Dimes (MoD), during a four-part series on newborn screening. The disparity in state screening panels, lack of a national standard, and varying health outcomes among states were major themes. During one of the segments, MoD released their report card on state newborn screening programs. The MoD advocated for the screening of nine specific disorders, plus hearing loss.

After discussion with members of the APHL Newborn Screening and Genetics in Public Health Committee, the board and staff, APHL narrowed its points to one main message: Newborn screening protects children’s health; accurate testing is an important part of the process. APHL developed a media release, newborn screening messages and a one-page newborn screening fact sheet for laboratory directors to quickly respond to media inquires in light of the MoD report. The newborn screening messages focused on four main issues:

1. System is essential– newborn screening is a system, which involves testing, confirmation, notification, follow up, training and education.
2. State laboratories are critical– they conduct almost all the testing in the US, and assure quality test results in collaboration with the CDC.
3. Process is dynamic– advancing technology makes expanded screening possible. More than thirty states’ public health laboratories utilize tandem mass spectrometry (MS/MS) in their program.
4. Funding is needed– funding must cover comprehensive, coordinated program of testing intervention, follow up, training and education.

Funding for newborn screening programs in state public health departments is crucial. In 2003, Senators
Christopher Dodd (D-CT) and Mike DeWine (R-OH) introduced the “Newborn Screening Saves Lives Act of 2003,” after requesting that the Government Accountability Office (GAO) assess what states are doing in regards to newborn screening: to access the GAO report, visit www.gao.gov/new.items/d03449.pdf. The legislation provides resources for education and training initiatives for health care professionals, state laboratory personnel, families and consumers. The legislation was recently introduced in the House on June 2, 2004, as “Newborn Screening Saves Lives Act of 2004” - H.R. 4493 (see http://thomas.loc.gov).

Currently, thirty-five states use MS/MS to screen newborns for various disorders. Thirty-two states use MS/MS to screen for mandated disorders. Eighteen states test for 30 or more disorders, an additional eight states test for 21-29 disorders and two for 11-20 disorders. Of the remaining states, which test for ten or fewer disorders, six are already testing for MCAD, a potentially devastating metabolic disorder mentioned in several recent articles and one of the nine metabolic conditions recommended by the March of Dimes. Since MCAD testing requires use of tandem mass spectrometry, the technology used to identify a wide range of other genetic and metabolic disorders, states with MCAD capability are positioned to expand their test panel to include other disorders.

In 2001, the American College of Medical Genetics, under contract with Health Resources and Services Administration, Maternal and Child Health Bureau, convened an expert panel group to review available information on newborn screening and to make recommendations based on the best scientific evidence and analysis of that information. The recommendations will create a model decision matrix based on specific criteria challenging newborn screening programs and outline a uniform panel of conditions for screening. They also will address model policies and procedures and minimum standards for state newborn screening programs that range from screening systems to the primary care community and specialists. The review process and the resulting recommendations are expected to be completed in 2004. The new HHS Secretary’s Advisory Committee on Heritable Disorders and Genetic Diseases in Newborns and Children intends to use the recommendations from the report on a uniform panel of conditions for screening as the foundation for discussion at future Advisory Committee meetings.

Every state newborn screening program participates in the Newborn Screening Quality Assurance Program (NSQAP) at CDC. NSQAP is a voluntary, non-regulatory program to help state health departments and their laboratories maintain and enhance the quality of test results. The program is operated in partnership with APHL, and provides services to more than sixty-nine domestic newborn screening laboratories, manufacturers of diagnostic products, and laboratories in fifty-three countries. NSQAP has been the only comprehensive source of essential quality assurance services for dried-blood-spot testing for over twenty-five years. The Quality Assurance/Quality Control/Proficiency Testing Subcommittee of the APHL Newborn Screening and Genetics in Public Health Committee provides guidance for NSQAP on procedures, policies and activities for the quality assurance of laboratory testing. The subcommittee, in collaboration with NSQAP, is working to create a US map grid of the methods (by analytes) states are currently using for their newborn screening programs.

For more information, contact Jelili Ojodu, APHL’s newborn screening and genetics program manager, 202.822.5227 ext. 235, jojodu@aphl.org

Testing is mandated but not yet implemented in three states.
APHL Awards $250,000 to State Labs

APHL is pleased to announce that approximately $250,000 in funding has been awarded for a grant, “Implementing Food Safety Recommendations in States.” The APHL/CDC grant allows states to improve the food safety capacity of their public health laboratories by implementing recommendations from APHL’s report, A Recipe for Stronger Food Safety Testing Programs. Some of the funded activities will serve as pilot projects to test their fitness for national use in food safety.

Arkansas will purchase a real-time polymerase chain reaction (PCR) cycler to reduce the time needed to identify organisms in clinical specimens during both routine and outbreak testing, and an ultra-low freezer for long-term sample and isolate storage.

Iowa will begin performing real-time PCR for Norovirus detection by purchasing PCR equipment, and will use it to validate a new real-time PCR method.

Michigan’s pilot project will encourage the submission of PulseNet-tracked isolates to the state public health lab by providing clinical laboratories with appropriate prepaid express mailers, improving submission rates and building stronger ties with clinical labs.

North Dakota will purchase a real-time PCR cycler to improve testing time and capacity for Norovirus. It will also conduct a study to verify the performance of a latex slide test for E. coli, and validate a real-time PCR procedure for E. coli testing.

Pennsylvania will cut the time needed for PFGE testing in half for both surveillance and outbreak purposes by obtaining a network server and the software needed to allow more employees to access the CDC National Database simultaneously.

Rhode Island will expand its ability to test for foodborne pathogens under biological containment by acquiring a bench-top hood, and will also use funds for staff training in food microbiology.

Virginia will purchase equipment for use in developing a DNA-sequence database and strain library to cluster and track foodborne pathogens, as well as use funds to improve foodborne specimen submissions by creating a new submission form and distributing specimen collection kits and prepaid mailing labels.

For more information about the grant, contact Jeremy Gillissen, APHL’s food safety program manager, at 202.822.5227 ext. 245 or jgillissen@aphl.org.

IOM Meeting on Pandemic Influenza

The Institute of Medicine’s (IOM) Forum on Microbial Threats hosted a public workshop, Pandemic Influenza: Assessing Capabilities for Prevention and Response, on June 16-17, 2004, at the National Academy of Sciences in Washington, DC. The workshop’s aim was to inform forum members of the likelihood of an influenza pandemic and to examine the issues that must be resolved to prepare and protect the global community. APHL member Dr. Pete Shult, from the Wisconsin State Laboratory of Hygiene, was invited to participate in a panel discussion focusing on response and planning. Shult addressed the role of state public laboratories in influenza surveillance, monitoring performance of rapid flu tests, subtyping, and the dangers of not responding quickly to an outbreak.

Emerging Infectious Disease Framework Subcommittee Created

In February 2004, the APHL Infectious Diseases Committee recommended that a subcommittee be convened to develop a framework for public health laboratories to use in planning and responding to emerging infectious diseases. In June, the new Emerging Infectious Disease (EID) Framework Subcommittee met at APHL headquarters to create a checklist of criteria that state public health laboratories can use to plan for and respond to new diseases. Some of the topics covered in the checklist include specimen transport, safety, communication and regulatory requirements. The subcommittee is chaired by Dr. Jane Getchell (DE) and includes: Dr. Eunice Froeliger (VT), Dr. Jan Nicholson (CDC), Dr. Elizabeth Delamater (TX), Dr. Sydney Harvey (LA County), Dr. Pete Shult (WI), Dr. Leslie Wolf (NC), Ms. Maureen Sullivan (MN) and Dr. Steve Gradus (Milwaukee). Once completed, this document will be shared with all APHL member laboratories.

Public Health-Clinical Laboratory Relationships Subcommittee Created

One of the APHL Infectious Diseases Committee’s strategic objectives is to enhance relationships with commercial, private and hospital laboratories. To further this objective, a new subcommittee was created to define and clarify joint concerns related to infectious disease detection and surveillance; it will also review examples of existing public-private laboratory networks and effective state laws, and will explore the need for
FDA Waives Two More Rapid HIV Tests
The Food and Drug Association (FDA) has just granted Clinical Laboratory Improvement Amendments of 1988 (CLIA) waived status to two more rapid HIV tests: the OraSure OraQuick rapid HIV Test for oral fluids and the Uni-Gold Recombigen HIV Test. These tests are now available for broad use outside of the traditional laboratory setting. This change allows the tests to be used by anyone who possesses a CLIA certificate of waiver, including physicians' offices, health clinics, mobile health centers and community-based organizations. However, there are no federal requirements for personnel, quality assessment, or proficiency testing. Organizations with a CLIA certificate of waiver need only to follow the manufacturer's instructions on how to perform the test.

In addition to the plenary and poster sessions, the meeting also hosted several breakout sessions, including the first meeting of the CDC/NTCA TB Genotyping Advisory Committee, a quarter of which consists of laboratorians.

2004 National TB Controllers Workshop
The National TB Controllers Association (NTCA) held their annual meeting in June in Atlanta, GA. This year's workshop, “Critical Partnerships for TB Elimination,” focused on the laboratory. APHL member Dr. Nancy Warren (PA) served as the association's representative on the planning committee; at the workshop, NTCA president Kim Field recognized APHL for its participation. A number of state public health laboratorians attended the meeting.

Plenary sessions focused on TB genotyping, the intersection of program and laboratory, and new technologies. Poster sessions provided opportunities to share state-specific examples in these areas. Dr. Eric Blank, director of the Missouri state public health laboratory, presented the recently published TB report, Task Force on the Future of TB Laboratory Services. Blank discussed the principles, benchmarks, and implementation of the report and outlined the steps that APHL and NTCA need to jointly take in order to enact the recommendations. Dr. John Dyke from the public health laboratory of the Michigan Department of Community Health stressed the critical importance of interactions between laboratories and TB programs, highlighting examples of how public health laboratories can help TB controllers link more effectively to clinical testing sites. Overall, the workshop emphasized the importance of the laboratory in the diagnosis and treatment of tuberculosis.
Antimicrobial Susceptibility Testing Programs Reach Thousands

The CDC’s Division of Laboratory Systems, Laboratory Practice Training Branch, identified a need for widespread antimicrobial susceptibility training (AST) in the US. Janet Handler, a senior specialist in clinical microbiology for the Division of Laboratory Medicine at UCLA Medical Center in Los Angeles, CA, was hired to develop and conduct training across the country.

Over the past two years, the National Laboratory Training Network (NLTN), with Janet Handler as the speaker, presented 78 programs on various aspects of antimicrobial susceptibility, reaching 13,281 people across the United States. Every state had participants. The NLTN also reached the Bahamas, France, Ontario, Canada, New Zealand and Venezuela. Various training modalities were used, including seminar workshops, wet workshops, audio teleconferences, train-the-trainer programs, and combination internet-teleconferences.

Course participants included public health personnel, clinical laboratory staff, epidemiologists, reference laboratories personnel, CLIA inspectors, CDC and APHL employees.

The numerous AST programs offered:

- Antimicrobial Susceptibility from a Public Health Perspective
- MRSA, VISA, VRSA, CAST issues of S. Aureus
- NCCLS Standards
- Advances in Antimicrobial Susceptibility Testing
- Infectious Disease Surveillance, a Team Approach
- Methicillin Resistance Staphylococcus Aureus in HI
- National Antibiotic Susceptibility Testing for Public Health Labs
- NACMID-NLTN Antimicrobial Resistance Around the World, a Laboratory Perspective
- Antimicrobial Resistance Testing: Train the Trainer
- Important Considerations for Detecting and Reporting Antibacterial Resistance
- Antimicrobial Resistance: Detection and Reporting from a Clinical and Public Health Perspective
- NYC/ASM-NLTN – Testing Bacteria Not Addressed
- Antimicrobial Susceptibility Testing for the Smaller Laboratory - What You Need to Know
- Microbial Hot Topics: A Hands on Training Workshop

The combined effort of the NLTN offices over the last two years has had a tremendous impact on helping people understand antimicrobial susceptibility testing and has helped to improve reporting practices in the United States. Evaluations to date indicate that participants intend to make changes in practice after attending NLTN programs. The CDC Laboratory Practice Training Branch and the NLTN plan to conduct outcome evaluations that will identify and quantify improvements resulting from this extensive educational outreach.

Food Safety Discussed at VA Public Health Series Course

In July, public health laboratorians from sixteen states gathered at a one-week Public Health Series laboratory course, “Laboratory Investigation of Foodborne Illness.” The program was co-sponsored by the National Laboratory Training Network’s Boston office, and the Virginia Division of Consolidated Services. Lectures and laboratory exercises took place in Virginia’s new training facility. Faculty drawn from academic food safety programs, CDC, FDA, USDA, FBI and the public health laboratories discussed technical aspects of current and future methods to investigate foodborne illness. Speakers addressed the problem of isolating microorganisms from complex matrices, the use of molecular techniques to demonstrate viruses and parasites in food, the use of chrome agars, and rapid testing for staphylococcal enterotoxin.
Attendee Achievements

- Gained hands-on experience identifying coccidian parasites with both conventional and fluorescent microscopy.
- Learned to consider certain legal issues when called as an expert witness.
- Enjoyed access to the instruments and expertise of six manufacturers.
- Tried out the BAX, Dynal Biotech, and MATRIX MicroSciences systems.
- Watched the LightCycler, SmartCycler and Luminex systems demonstrate pathogens in food.
- Studied case examples of actual outbreaks in which the role of the laboratory was described.
- Participated in molecular epidemiology discussions with a specific emphasis on PulseNet.

Timely recognition of organisms associated with foodborne disease is an important function of the public health laboratory. This course provided a rare opportunity for hands-on training in both traditional and molecular methods.

Tackling the Chattahoochie: Center Launches Public Health Laboratory Directors’ Orientation

Being a public health laboratory director requires considerable skill at balancing a boatload of priorities. Even a seasoned laboratory director can get bogged down in setting, shuffling, and re-shuffling priorities. So what do you do when you are a new—or a nearly new—public health laboratory director?

The need to craft a formal process to provide mentorship and orientation for new laboratory leaders has been identified repeatedly over the last decade. This need became a priority when an APHL survey of laboratory directors identified an impending leadership vacuum. In a concerted effort to equip emergent leaders for their responsibilities, the National Center for Public Health Laboratory Leadership (NCPHLL) developed a new laboratory directors’ orientation program. Seven public health directors agreed to pilot this program through its trial run.

Duane Boline (KS), Mary Celotti (VT), Jack DeBoy (MD), Romesh Gautom (WA), Maurice Knuckles (DC), Mike Loeffelholz (AR) and Victor Waddell (AZ) participated. Eric Blank (MO), served as a mentor and advisor, and Eva Perlman, senior director for professional development, and Pandora Ray, staff associate from NCPHLL, represented APHL staff.

The program is comprised of three components and encompasses three full days. On the first day, the lab directors tackled a team-building exercise, “Navigating the Waters of Leadership and Teamwork.” In a hands-on approach, the team explored elements that impact both individual and team performance: they used an assessment tool developed by Team Management Systems that couples an actual rowing activity with a period of review and discussion. After this activity, concepts from a completed homework assignment were applied to the process. Facilitators guided the group of novice rowers through the process, which, in the case of the aforementioned directors, resulted in the boat slicing smoothly through the muddy waters of the Chattahoochie River—albeit if only for a brief moment!

The Practical Guide for the Public Health Laboratory Leader was provided in draft form to each of the participants.

NLTN Library Expands Collection

Recently the NLTN lending library acquired fifty new training resources for its collection.

A few of the additions:
- DNA from A to Z
- The Emergence of Zoonotic Diseases
- Bioterrorism: Close Encounters of the Lab Kind

To borrow materials, log on to www.nlttn.org and select “Lending Library.”

Center for PHL Leadership

Tackling the Chattahoochie: Center Launches Public Health Laboratory Directors’ Orientation

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The Practical Guide for the Public Health Laboratory Leader was provided in draft form to each of the participants.
It is intended to be a living document, a work in progress. This guide was developed with the hope of being equally useful to the new, nearly new, or seasoned laboratory leader. Each participant was asked to carefully review the contents of the guide to identify any gaps, and provide feedback and comment.

On the second day of orientation, a media workshop presented by the Merrick Communications Group tested the participants individually. Each director was given the principles and concepts of effective communication during a crisis situation and was charged with developing message points. Each then participated in a simulated interview that was videotaped for critique and analysis. After the analysis, the individual participated in a second interview in an attempt to incorporate the lessons learned from the first exercise. Each person kept their videotapes sessions as a learning tool for future review and practice.

This session was followed by an orientation to APHL. Carol Clark, chief operating officer, outlined the mission, vision, strategic plan and organizational structure. Clark reviewed the member services and categories, governance structure, and the APHL Annual Report, which profiles the accomplishments of the organization. Then Eric Blank provided a historical perspective of the association. Betty Franko, director of the Georgia state public health laboratory, joined the group to provide her perspective and anecdotes. This session was followed by a question and answer opportunity. Duane Boline, director of the Kansas state public health laboratory, stated that this orientation session “answered a lot of questions that I have had for years.”

For the third day of orientation, the group convened at the CDC. Key CDC representatives met with the public health leaders throughout the day, including Eric Sampson and Andrea Lipman from the National Center for Environmental Health; Ed Thompson, deputy director for the Public Health Service; and from the National Center for Infectious Diseases, Jan Nicholson, Debbie Deppe, Donald Sharp and Richard Skibicki. Over lunch, the group spoke with Bob Martin and Toby Merlin of the Division of Laboratory Systems (DLS).

After lunch, Bob Martin and Karen White discussed their interaction with the public health laboratories. Office of Terrorism Preparedness and Emergency Response representatives Charles Schable, Alison Johnson, Ted Jones and Amy Loy described their role and fielded questions from the group. The final group to introduce themselves and report on the status of their projects were staff from the National Center for HIV, STD and TB Prevention, including Dale Hu, Tom Folks, Marcia K alish, Steve McDougal, Bharat Parekh, Mark Rayfield, Tom Shinnick and Craig Studer.

At the close of the program, laboratory director Maurice Knuckles said, “This was invaluable. Just knowing who to call when you have a question makes your life easier.”

The organizers of the orientation program extend special thanks and appreciation to Carol Cooke and Andrea Pratcher, DLS, for their tremendous and tenacious dedication to delivering on a wish list of CDC speakers.
**Around the World with Class IX**

Training fellow Abigail Viall continues her work in Haiti on a Lymphatic Filariasis noncompliance study. She helped with census-taking and serum collection in four new sentinel sites. She also spent time testing a survey she designed that will be administered in a case-control study. Viall reactivated her National Science Foundation fellowship grant to prolong her stay at the CDC and continue the projects she has initiated there. She insists, “Only someone who has found the working environment to be incredibly stimulating and enjoyable would choose to stay – and use his or her own funds to do so!”

Research fellow Juliet Bryant traveled to Monrovia, Liberia, for two weeks in response to a suspected outbreak of yellow fever. She worked with the Liberian Ministry of Health, providing technical assistance and training in serological diagnosis of yellow fever virus to laboratory technicians. The need for increased laboratory training in Liberia was affirmed at a March meeting of UNICEF, WHO, Medicins Sans Frontieres, and the CDC. Developing in-country diagnostic capacity for yellow fever virus was recognized as a key priority for outbreak preparedness and emergency response. In addition to training, Bryant assisted in conducting an overall assessment of laboratory procedures yielding recommendations for strengthening diagnostic capacity for infectious diseases in Liberia. Bryant gained experience transporting reagents and diagnostic specimens across international borders and regarded the trip as an “opportunity to learn about and discuss problems in disease surveillance with officials from the WHO, UNICEF, USAID, and other NGOs.”

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**Other Fellowship News**

Class IX training fellow Joan Kenney, from the New Mexico State Laboratory, worked with Indian Health Services to help train environmental health employees from nine different tribes. The workshop focused on mosquito collecting, rodent trapping, tick/ flea collecting and burrow swabbing. Kenney expressed that “the level of interest in the room was very encouraging, as was the involvement of CDC liaisons from the University of New Mexico.”

Yuping Ran, Class V international fellow, won first prize at the Chinese-American Microbiology Society (CAMS) 2004 Annual Meeting for his poster “Discovery of Two Morphotypes of Penicillium marneffei that Differ in Virulence and Proteinase Production.” The conference took place during the 104th General Meeting of the American Society of Microbiology in New Orleans.

Jill Thompson, Class IX training fellow from the New York State Department of Health, participated in a vancomycin-resistant Staphylococcus aureus (VRSA) outbreak in New York. This was only the third outbreak of this kind in the United States. Thompson and her group tested over 100 primary samples and isolates throughout the April outbreak.

Class VI international fellow Alejandro Castello tested samples from a rotavirus gastroenteritis outbreak in Jamaica. Castello was tasked with establishing the presence of rotaviral antigens and trying to grow virus from serum samples. The results of this investigation were presented at the 53rd Epidemic Intelligence Service Conference, in Atlanta, GA, and the 3rd International Conference on Vaccines against Enteric Diseases, in Montego Bay, Jamaica.
Alaska Laboratory Tests Blubber, Bear, and Mummy Hair

Everything seems larger-than-life in Alaska: the sky, the fauna, the lengthy stretches of darkness and light, the land itself. The state that calls itself the last frontier is more than double the size of Texas and one-fifth the size of the lower forty-eight states combined.

Bernard Jilly, director of the state’s public health laboratory for the past 5 years, said sometimes the challenges of working in Alaska seem larger as well. Consider recruitment. Altogether only about 630,000 people call Alaska home. And, until this year there was no in-state bachelor’s-level medical technician program. “We mostly have to import staff from the lower 48,” said Jilly, who is currently in the market for an environmental health fellow.

Consider specimen submissions. If there is a tuberculosis (TB) outbreak in a remote village, it can take a week or longer for sputum specimens to reach the main public health laboratory in Anchorage. It is not unusual for specimens to travel via all-terrain-vehicle or snow machine to another village to reach a dirt landing strip and a single-engine aircraft, then to be flown two to three hours to one of only 12 cities with a runway large enough to accommodate a jet, and finally flown via Alaska Airlines to Anchorage. Of course, said Jilly, “weather can play a significant role. Juneau, for example, tends to fog over a lot. If this happens, air traffic may be stalled for a week or so.”

Similarly, all supplies and laboratory equipment must come from at least as far away as Seattle and withstand temperatures as low as -40 degrees Fahrenheit during winter transit. “Packaging and shipping costs tend to be pretty expensive,” Jilly observed.

But if the challenges are sometimes amplified by weather and terrain, so too are the rewards. Said Jilly, “Nobody’s neutral about Alaska; you either love it or you hate it...I fell in love with Alaska the first day I set foot in it.”

Today the former pathology professor, who spent years in Chicago, works from a three-year-old, 36,000 square-foot facility that sits alongside protected wetlands on the northeast edge of Anchorage with an expansive view of the Chugach Mountains. He oversees a staff of fifty scientists—about thirty-five in Anchorage and another sixteen at a virology laboratory on the grounds of the University of Alaska in Fairbanks.

Despite the immense dimensions of the state, Jilly said, “Alaska is like a small city.” Most residents live within thirty miles of Anchorage and “everyone’s on a first name basis because we all meet each other at the grocery store.” This collegiality carries over into the laboratory, which has a close working relationship with the state medical examiner—who is co-located in the Anchorage facility—law enforcement officers, and military personnel. The state public health laboratory is the reference laboratory for local military bases as well as the Navy hospital in Okinawa, Japan.

Last year when the state began surveillance for West Nile virus—a serious threat because of Alaska’s large and locally revered flocks of ravens and eagles—the military collected mosquito pools and sent samples down to its lab in the continental US for analysis, while the state laboratory tested human and avian samples.

As elsewhere, the main laboratory workload reflects the prevailing health concerns of the population; in this case with a heavy emphasis on sexually transmitted diseases, hepatitis, TB, and botulism. (Alaska has by far the highest
rate of foodborne botulism in the country, primarily due to the popularity of fermented native foods.) The single highest volume procedure performed by the laboratory is the Aptima™ test for nucleic acid detection of gonorrhea and chlamydia in urine specimens (which are stable for up to a month and present few shipping problems.)

But, this being the frontier, laboratory work can sometimes veer off into the bizarre, at least by the standards of the lower 48. Shortly before Thanksgiving last year, Jilly received seventy-five pounds of fermented whale blubber—a delicacy in the bush—to test for botulism. “Of course,” said Jilly, “that came in late on a Friday afternoon.” The Fairbanks branch of the state laboratory commonly receives fox, wolf, and even bear heads to test for rabies. And it is not unusual for the laboratory to perform brucellosis testing on serum or organs from caribou, walrus and seal.

Just last year the laboratory started a chemistry program, so far devoted to forensic toxicology, chemical terrorism and biomonitoring. One of the state’s first biomonitoring projects is a study of mercury levels in local populations that consume large quantities of fish. Although the study is ongoing, preliminary data—based in part on measurements from ancient, mummified hair—show little change in mercury levels over at least the past thousand years. (Even timescales are larger in Alaska.)

In some ways, though, Jilly’s shop shares the frustrations and aspirations of public health laboratories nationwide. What is the biggest challenge facing the Alaska public health laboratory? “The first thing out of any laboratory director’s mouth when you ask that question,” he said. “Money, money, money.”

Like many states, Alaska is undergoing fiscal retrenchment. The Alaska laboratory has suffered a 25% cut in general state funds on top of about a 15% reduction in federal bioterrorism grant funds and a 7% reduction in tuberculosis grant money. About a sixth of the laboratory’s technical staff has been eliminated. “We’ve been really decimated,” said Jilly.

But assuming the fiscal situation improves, plans are afoot for laboratory enhancements. Jilly has set aside $1 million for a laboratory information management system that will enable real-time, Web-based specimen tracking and reporting. Said Jilly, “I personally feel that electronic connection here in Alaska is essential to our survival because of the physical challenges of a state like this. I’d like to push the IT (information technology) envelope as far as we can.” Already the laboratory is working with the medical examiner to do remote autopsies.

Jilly also plans to “exploit rapid molecular technologies to the maximum.” “If it takes a week to get a specimen here,” he explained, “you don’t want to wait another week to get an answer.”

Looking at the big picture, Jilly observed that “we went from a rather sleepy infectious disease laboratory to a really cutting-edge, state-of-the-art facility.” Now, he said, even on the frontier it’s time to “go into the twenty-first century full speed ahead.”

...I fell in love with Alaska the first day I set foot in it.

- Bernard Jilly, PhD
Arkansas Breaks Ground for New Public Health Laboratory

Arkansas officials broke ground for a new public health laboratory in August. At the ceremony, Governor Mike Huckabee stressed the need for the new facility: “The aftermath of the terrorist attacks on our country helped us to understand that a laboratory building, designed to allow testing for agents such as anthrax and smallpox, is urgently needed. We’re also seeing an onslaught of newly discovered infectious diseases... It’s clear a state-of-the-art laboratory is a necessity for Arkansas.”

Dr. Mike Loeffelholz, laboratory director, pointed out that it is also important to recognize that the laboratory protects the health of Arkansas citizens every day by insuring that the food and drinking water are safe to eat and drink, that highly infectious diseases are promptly recognized and controlled, and that all newborns are tested for genetic defects.

This is a great day for public health in Arkansas. - Fay Boozman, PhD, director, Arkansas Department of Health

Quick Facts:
Location: just south of the present Health Department headquarters in Little Rock, AR
Funding: a bond issue financed by fees charged by the Health Department
Construction time: September 2004 - December 2005
Cost: approximately $23 million dollars
Size: approximately 80,000 square feet
Laboratory employees: 140
Architectural services: The Wilcox Group of Little Rock, AR, and the Lord, Aeck and Sargent of Atlanta, GA
Engineering services: TME of Little Rock, AR, and Nabholz Construction Company

Discussing Labs with Legislators

This summer APHL staff exhibited on behalf of public health laboratories at the National Conference of State Legislatures’ (NCSL) Annual Meeting and Exhibition in Salt Lake City, UT. NCSL is a bipartisan organization that provides state legislators and staff with research and technical assistance. Each year NCSL convenes at an annual meeting attended by thousands of legislators and staff.

Over the past four years, APHL has conversed with legislators from almost every state about the importance of public health laboratories. Many legislators are unfamiliar with the laboratories and are intrigued by the number of services and protections offered to the community. A small number of legislators are old hands: these politicians have toured their own public health laboratory, or can offer the name of their state’s laboratory director, or know instantly which current legislative efforts involve the well-being of laboratories.

APHL has perceived an enormous value from these casual discussions with legislators, finding that most are very interested—in both a personal and political capacity—in the issues that laboratorians deal with every day. For more information about NCSL, visit www.ncsl.org.

Brokopp to Lead CDC’s Select Agent Program

APHL member Charles Brokopp, DrPH, has been selected as the director of the select agent program within CDC’s Office of Terrorism Preparedness and Emergency Response. Brokopp has been the director of Utah’s Division of Epidemiology and Laboratory Services for ten years, and has extensive experience with public health and environmental health issues. During his twenty-nine years in public health, Brokopp has worked closely with many local, state, federal and private public health and environmental organizations.

RAPID HIV TEST TECHNICAL ADVISOR/ TRAINER URGENTLY NEEDED

APHL is seeking a qualified laboratory scientist for a short-term 2-month assignment in Namibia. The ideal candidate will have a background and experience in rapid HIV testing, quality assurance, and training. Experience in a cross-cultural setting, preferably in Africa, will be advantageous.

All interested parties should contact Yvette Benajmin, director of global health, at 202.822.5227, ext. 246, or ybenjamin@aphl.org
Profiles in Public Health Laboratories Series

LA COUNTY LABORATORY: SURVIVING IN THE CITY OF ANGELS

DIRECTOR
Sydney Harvey, PhD – a molecular biologist and former owner of Irvine Diagnostic Services (now a part of Quest Laboratory).

LOCATION
Heart of the music district in downtown Los Angeles near the Dorothy Chandler Pavilion.

FACILITY
“We’re bursting at the seams.” The laboratory occupies the top two floors of the 14-story Department of Health Services Building in a space designed to accommodate about a third of the current laboratory staff. Because the building has no freight elevators, a carbon dioxide tuberculosis incubator is “sitting on the loading dock with no way to bring it up.” Fortunately, the laboratory will move to a larger, renovated county building in 2005.

# STAFF
145 – Bigger than most state laboratories.

RELATIONSHIP TO THE STATE LABORATORY
No regulatory oversight from the state public health laboratory.

DISTINGUISHING CHARACTERISTICS
> Laboratory Response Network reference laboratory responsible for confirmatory testing of certain suspected agents of bioterrorism for all of California south of San Luis Obispo and outside of San Diego.
> One of only 40 Level 2 chemical terrorism response laboratories nationwide.
> Accredited by the College of American Pathologists with distinction.
> Open for business at least six days a week, Monday through Saturday.
> Became a PulseNet member (capable of performing a DNA fingerprinting method on foodborne bacteria to help pinpoint the source of foodborne disease outbreaks) before the state public health laboratory.

HIGHEST VOLUME TESTING
Roughly a quarter of the laboratory workload is fee-for-service testing for private community health centers, which generates several million dollars in revenue each year. Much of this work is sexually transmitted disease testing.

BIGGEST RECENT SUCCESS STORY
Survival. Because LA County owns six hospitals and four comprehensive health centers—each with its own clinical laboratory—the public health laboratory has been viewed “as just another clinical lab.” Several years ago the laboratory was stripped of its entire environmental chemistry program as equipment and staff were relocated to the county agricultural laboratory. Just this past year, the laboratory has faced a renewed effort to “force (it) into the mold of the clinical labs” as part of a grand consolidation scheme. Harvey’s extensive private sector experience has enabled her to make a case for the unique value of the public health laboratory. County authorities “are beginning to understand a little bit more how we’re different,” she said. “That to me is a success right now.”

BIGGEST CHALLENGE
Staffing. “Up until five years ago, I did not have a single position that did not require a license (from the California Laboratory Field Services Office). You don’t find a person . . . who wants to come into a public health lab and train for six months at the bench and sit for a state exam to get a license after already completing a PhD. It’s a lot easier to go to a local biotech company and they pay a lot more.”

# VACANCIES 12

GOAL
To become “one of the best public health laboratories in the US. If we’re not there, we’re awfully close.”
Lauren DiSano, MHS, is APHL's new environmental health program manager, effective July 1. Over the past year, DiSano worked on water security issues at the EPA while serving as an Association of Schools of Public Health fellow. Previously, she earned a master's degree at the Johns Hopkins School of Public Health, Department of Environmental Health Sciences, and a bachelor's degree at James Madison, Department of Health Sciences. DiSano has also worked in environmental community development at the Herring Run Watershed Association.

Diane Johnson, MPH, became APHL's global health program manager on August 9. Johnson will be responsible for the day-to-day activities of the association's involvement with the President's Emergency Plan for HIV/AIDS Relief (PEPFAR). Johnson comes from Inflexxion, Inc., where she provided management, coordination, and negotiating skills on the safe use of pharmaceuticals to address public health concerns. She earned a master's degree at the University of North Carolina at Chapel Hill, Department of Maternal and Child Health, and a bachelor's degree from Brown University, Department of Biocommunity Health. Johnson has also worked at the Institute of Medicine, on the Food and Nutrition Board, and currently publishes as a freelance journalist in an urban magazine, Sage Advice, Urban City Magazine, published quarterly out of New York City.