Since September 11, 2001, US and world laboratorians have had to think more seriously about chemical, biological, and radiation threats than at almost any other time in the history of public health laboratories. Thus it was fitting that the APHL’s 50th anniversary meeting—held in Albuquerque, New Mexico, this past June—featured a bioterrorism (BT) plenary to discuss the current state of laboratory preparedness should terror strike again.

Jim Pearson, deputy director of the Virginia Division of Consolidated Laboratory Services, moderated a panel of experts that included Michael Ascher with the Office of Public Health Preparedness (OPHP), Charles Brokopp of the Utah Division of Epidemiology & Laboratory Services, George Eadon with New York’s Wadsworth Center, Segaran Pillai with the Florida Bureau of Laboratories, Doug Anders, a microbiologist with the FBI-HQ Laboratory Division, Hazardous Materials Response Unit, and Charles Schable with CDC’s Bioterrorism Preparedness and Response Program. These speakers assessed the effects of the bioterror assaults post-October 4, 2001, and presented a cohesive portrait of how FBI, CDC, and APHL members collaborated and continue to collaborate to protect the public health.

Although each speaker focused on slightly different subject matter, three themes emerged throughout the plenary: 1) public health laboratories (PHLs) were working at—and even beyond—reasonable peak capacity during last fall’s BT crisis, 2) steps are already underway to implement the lessons learned from that experience, and 3) communication is critical to coordinate PHL efforts in an emergency situation.

In his opening remarks, Pearson noted that 85 percent of the 47 states responding to the APHL “Bioterrorism Preparedness Capacity/ Capability Survey” reported that the need to perform BT testing impacted routine work and exposed gaps within the laboratory system. In particular, he said, the survey underscored a universal need for upgraded facilities, additional laboratory staff, expanded training opportunities and enhanced connectivity among Level-A laboratories.
PRESIDENT’S THOUGHTS

It was both an honor and a pleasure to have APHL come to Albuquerque, NM, 270 strong, on the occasion of its 50th anniversary annual conference. Dr. Walter Dowdle opened the conference with a keynote speech in which he praised APHL for the progress it has made in recent years, and emphasized the need for the association to play an active role shaping national public health policy rather than merely supporting public health policy decisions made by others. Dr. Dowdle’s comments served as a strong reminder of the need for APHL to move ahead with its plan to address organizational governance as a means of increasing its effectiveness and influence in the development of national public health policy.

Following the presentation by Dr. Dowdle, the conference pursued sessions along four primary themes. The first was that of bioterrorism and the lessons learned from last year’s anthrax incident. The format for this topic was a panel presentation and discussion by representatives of various federal, state, and local agencies that responded to the incident. The second theme, which occupied approximately half of the conference program, was that of public health laboratory leadership. This topic was explored in several sessions addressing the changing role of the public health laboratory director, training needs for current and future PHL directors, and issues relevant to decision-making and communication. A third focus of the meeting was border health and the impact of immigration and migration on infectious disease surveillance. The fourth topic of the conference was that of the association’s 50th anniversary, and included a retrospective session presented by emeritus APHL members, examining the evolution of the association and its members. The 50th anniversary celebration also included the presentation of a commissioned work of art commemorating APHL’s half century of service to the public health laboratory community. This piece is now on permanent display in the association’s Washington, DC, office.

All in all, the conference theme, “Honor the Past, Look to the Future,” is an apt introduction for the coming year in which APHL will examine its governance and structure to better prepare itself to assume its newly found role in the development of national public health policy.

Sincerely,

David Mills
Dear Members:

I want to take this opportunity to thank many of you for attending APHL’s 50th anniversary meeting last month. For those of you who weren’t able to attend, don’t think that you were left out. Visit APHL’s Web site at www.aphl.org/National_Conferences/nationalconference.cfm to download several of the plenary presentations. In addition, watch your mail for our 50th anniversary commemorative booklet—our first-ever year-in-review—and a lively, colorful commemorative poster of unique artwork commissioned by the association to honor 50 years of service to the public health laboratory community.

The artwork was made possible through a generous donation by Gen-Probe, Inc., a sustaining APHL member. And the commemorative booklet was made possible by the dedicated work of the late Carl Blank, to whom the association is deeply indebted. Carl led a small committee of emeritus members to make the vision of our 50th anniversary documentary a reality. I am very grateful to Carl for the work he pursued on our behalf throughout his career, and I shall miss his advice and good counsel, friendship, and the occasional Manhattan that we shared.

In the weeks following our meeting, in what is traditionally “down” time in Washington, the association has been busy dealing with an array of policy issues affecting our members: rapid HIV testing, newborn screening, and the formulation of a new department within the federal system to deal with homeland security. Shortly after returning from the annual meeting, we were asked to provide testimony to the Presidential Advisory Committee on HIV and AIDS on the subject of rapid HIV testing and, in particular, on the CLIA status of such tests. Members were quickly queried and Frances Downes (MI) agreed to represent the association at the committee’s meeting less than a week later. The full statement may be viewed on our Web site at www.aphl.org/docs/PACHATestimony.PDF. We are also planning additional opportunities for members to learn more about the limited public health testing certificate, since it is one of the key points of our position.

As you are undoubtedly aware, President Bush unveiled his plan for a Department of Homeland Security (DHS) in early June. APHL considered the president’s proposal in light of public health laboratory needs and responsibilities, and crafted our message with care. In short, although we are supportive of the concept of the DHS, we are concerned about specific proposals that would move key public health programs into a new department. Problems arise from the dual nature of the U.S. public health system, which uses public health laboratories to respond to both naturally-occurring and deliberate, man-made health threats. Again, to view our entire statement, please visit our Web site at www.aphl.org/docs/DHSStatement.PDF.

Lastly, APHL has been deeply engaged in the national dialogue surrounding newborn screening. As we go to press, we will be participating in an informational session with the U.S. General Accounting Office, which is beginning a study of all states’ newborn screening programs for genetic and metabolic conditions. Types of information GAO may be collecting include states’ testing procedures, education and follow-up activities, program costs and funding sources, and newborn genetic privacy laws.

And so our next 50 years begin . . .

Wishing you a safe and enjoyable summer’s end,

Sincerely,

Scott J. Becker
Executive Director
SUMMARY OF RECENT BOARD EVENTS

The APHL Board of Directors met on June 8 and 11, 2002 in Albuquerque, NM. A summary of the recent board actions is listed below.

For more information, or to request a copy of the board minutes, contact Shawna Webster via email at swebster@aphl.org or call 202.822.5227, ext. 200.

- Discussed partnering with the American Association of Veterinary Laboratory Directors on issues of food safety, bio- and agro-terrorism, and zoonotic disease control.

- Met with CDC’s Carol Pertowski to discuss ways in which APHL members might use EPI-X and the new FORUM.

- Approved a motion to support the American Public Health Association’s (APHA) Committee on Laboratory Standards and Practice (CLaSP) and will send a letter in promotion and support of CLaSP to the APHA management.

- Approved a membership policy on representation which states: “Any activities pursuant to APHL interests should be undertaken by APHL member representatives (Full, Associate, Delegate, Emeritus, Individual) only. However, there may be circumstances where it is not feasible to have an APHL member represent the association. To represent the association, the APHL Executive Director must approve an APHL non-member. Non-members will act using professional judgment as long as it is within the association’s instructions/guidelines. All individuals representing APHL, including non-members who are unfamiliar with the association, must complete an orientation about the association and the APHL program they will be representing.”

ANNUAL BUSINESS MEETING

The general membership of APHL met at the Annual Business Meeting in Albuquerque, NM on June 9. The following are highlights from that meeting:

- A motion was approved to amend the bylaws to read: “Honorary Members are those individuals bestowed by the Association for having made outstanding contributions to public health laboratories or who have served the Association with distinction. All APHL Lifetime Achievement Award recipients will be made Honorary members. They may hold appointed office (e.g. committee chair, liaison, taskforce), serve on committees, and speak from the floor of a general member meeting. Honorary Members may not vote and may not hold elected office. Honorary Members are exempt from paying dues.” (Article IV)

- Joe Joseph of Maryland was awarded the APHL Lifetime Achievement award. Joseph was not able attend the meeting in Albuquerque, but will be present at an awards ceremony in his honor at the Maryland Public Health Laboratory on August 1.

- Beth Hochstedler of the Iowa University Hygienic Laboratory was awarded the Thomas Maxson Scholarship for 2002.

- ASTHO Executive Director George Hardy updated the membership on current ASTHO activities.

- Committee chairs provided updates on current committee activities. You may find their reports on the APHL Website in August.
MARYLAND’S JOE JOSEPH LAUDED FOR LIFETIME OF LABORATORY LEADERSHIP

Ask Joe Joseph *anything* about laboratory practice and he’ll likely have an answer—and a straightforward one at that.

What has been the most significant achievement in laboratory practice in the past 50 years? “Development of the technique to amplify genetic material (polymerase chain reaction) because it allows us to identify a lot of agents that you can’t grow in culture; agents that we couldn’t identify before.”

What recent advances will have the greatest impact on lab practice in the future? “The Human Genome Project. And proteomics.” Knowledge gained from these endeavors will “enable us to screen for new diseases and to provide better treatments by blocking gene actions or gene products.”

What are the most pressing challenges facing the public health laboratory system today? “The big challenge is rebuilding the public health system; no funding has gone into it and it has deteriorated. Bioterrorism was a wake-up call.”

Joseph is not an idle talker; he speaks from of lifetime of experience. The man whom colleagues call a “living legend” has directed the Maryland Laboratories Administration for 25 years, ten of which he served concurrently as the state laboratory director and head of the Epidemiology and Disease Control Program. Prior to assuming the state’s top lab position, he was an assistant professor of microbiology at Ohio’s University of Toledo (1951-54), director of microbiological research for the Research Foundation of Toledo (1954-57), and chief of Maryland’s Division of Microbiology and Division of Virology and Immunology (1957-85).

On June 9, before a crowd of more than a hundred fellow laboratorians in Albuquerque, New Mexico, Joseph was named the recipient of the Association of Public Health Laboratories’ prestigious Lifetime Achievement Award. (As Joseph was unable to attend the award ceremony, Stan Inhorn, emeritus director of the Wisconsin State Laboratory of Hygiene, accepted on his behalf.) Ralph Timperi, director of the Massachusetts State Laboratory Institute, writes in the award nomination that Joseph is “a person of extraordinary vision” who has “been a leader in every aspect of the field of public health nationally and internationally.”

Indeed, a list of Joseph’s accomplishments reaches through both time and space, touching on most matters of significance to microbiologists in the past half century. He reported on disease transmission by inadequately sanitized anesthetizing apparatus in 1952, wrote a chapter on viral and rickettsial diagnostic procedures in 1963, described the efficacy of mumps vaccine in 1966, conducted research on the effects of chronic exposure to low levels of lead in 1973, and was co-chair of the first state laboratories consensus conference on HTLVIII/LAV serology in 1986—a milestone in efforts to develop valid serologic testing methods for retroviruses. Timperi notes that “in reports, in analytical and public health journals, at professional meetings, and in the daily practice of his profession, Dr. Joseph was a major contributor ... on many issues that include diagnosis of Lyme disease, Legionnaire’s Disease, hepatitis D, toxoplasmosis, and chlamydia; rabies immunology; alpha-fetoprotein screening; hemoglobinopathies; HIV testing; neuroblastoma screening; and personnel standards and quality assurance.”
Janet Anderson Nicholson, the associate director for laboratory science at CDC’s National Center for Infectious Diseases, was awarded the Association of Public Health Laboratories’ Presidential Award for her critical work communicating between CDC and APHL during last fall’s anthrax crisis. Nicholson is the first to receive this award, which was presented at the association’s annual meeting in Albuquerque, New Mexico, on June 9.

In the wake of the bioterrorist attacks, Nicholson was instrumental in orchestrating weekly conference calls between the CDC and APHL.

“I felt these communications channels were an essential part of responding to the events, and that it was part of the job I had as coordinator of the laboratory activities in the CDC Emergency Operations Center to keep information flowing between the different organizations,” she explained.

Although Nicholson viewed her work as routine, the laboratory community recognized it as exceptional. “I never realized how important the weekly conference calls were for the state public health laboratory directors,” she said. “We were all learning about anthrax during the crisis because our country had never experienced this as a national threat before. People I have met from APHL in various forums since then have remarked how important accurate scientific and procedural information were to the daily operations of the labs across the country.”

Nicholson earned a PhD in experimental pathology from Emory University after receiving an undergraduate degree in biology at Buena Vista College in Storm Lake, Iowa. In addition to being an associate director for laboratory science at the NCID/CDC, she is also a clinical assistant professor at the Department of Pathology at Emory University School of Medicine in Atlanta, Georgia. Outside her work at CDC, Nicholson serves on several boards and committees. These include the editorial boards for Communications in Clinical Cytometry and Clinical and Diagnostic Laboratory Immunology, and the membership and biosafety committees of the International Society for Analytical Cytometry. She has given numerous speeches addressing AIDS research, flow cytometry, and the biosafety of sorting unfixed human cells, and is considered an expert in these areas.

Nicholson says of her selection as an APHL awardee, “I am deeply honored,” adding that “over the years, I have come to learn how strong the public health laboratory network is and what an asset these laboratories are to the country.” She promises to “continue to promote the recognition of the important work of the public health laboratories throughout the country.”
Stepping Back in Time at Iowa’s University Hygienic Laboratory Booth at the APHL Annual Meeting

Iowa celebrated the APHL 50th Anniversary by taking conference participants back to the 1950’s when above ground nuclear testing took place. New Mexico was a major site where nuclear testing began. Iowa was one of 40 national surveillance stations selected to monitor radioactivity.

The setting for this collage of photos is a 1950s Iowa farm scene with cows grazing in the pasture and a nuclear cloud passing over. The participants, dressed as scientists, used very creative methods for collecting nuclear samples using an antique Geiger counter.
Leonard R. G. Manthe (MS), Director of Laboratories, Botswana, was among the African representatives at APHL’s 2002 annual conference, convened in Albuquerque, New Mexico, this past June. Botswana has been an APHL partner since February 2001, when a group of association members (led by Frances Downes, Director of the Michigan Public Health Laboratory) visited this African nation to assess its laboratory infrastructure and capacity to address such serious national problems as HIV/AIDS, tuberculosis, sexually transmitted diseases, and opportunistic infections. Manthe writes the following of his meeting experience.

My participation at the Association of Public Health Laboratories meeting was a meaningful and enjoyable learning experience. Association members presented topics that were educational, not only to me, but I believe to other African countries. For example, I gained valuable information about the US response to the anthrax terror attacks that I can use in the event Botswana has to deal with a problem of that magnitude.

It is my considered opinion that the objective of my invitation—to provide an opportunity to dialogue with my American counterparts— was met and fulfilled. The conference organizers planned my visit in such a way that at the end of the conference I visited the New Mexico Public Health Laboratory to learn the general layout of a US public health laboratory and how it is run. This experience was quite fitting to my plans as I am in the process of building a public health laboratory in Botswana. I also participated in a four-hour practical quality assurance program for a laboratory sponsored by the National Laboratory Training Network and the New Mexico Department of Health Scientific Laboratory Division. This was an excellent, short continuing education program whose objectives were relevant to all levels of personnel.

I strongly recommend that the Association of Public Health Laboratories continue to invite its African partners to its annual conferences as part of continuing education. I wish to thank all members of the Association of Public Health Laboratories for the invitation, and a special thanks to Bhavna Lall, APHL program manager, and her colleagues at the Washington, DC, office.
“Plan, communicate, and coordinate.” This, said Buck Henderson of the Texas Commission on Environmental Quality, was the take-home message of the Association of State Drinking Water Administrators (ASDWA) State Drinking Water Security Conference, held June 3-5 in Salt Lake City.

The meeting examined Utah’s experience with security during the winter Olympic games, ways to assess potential threats to the water system, and threat preparedness and response initiatives. Attendees learned about communication-building strategies; exemplary education, training, and outreach programs; and emergency response planning and implementation. The message was consistent: communication is vital. Speakers emphasized that public health laboratories must build relationships with all components of the water safety system, including federal and local government agencies, homeland security offices, advocacy groups, law enforcement agencies (including FBI field offices), water programs and utilities, water administrators, and those conducting local surveillance of the water supply (i.e., nearby neighbors), who may be the first to notice suspicious activity.

Kusum Perera, chief of the sanitation and radiation laboratory at the California Department of Health Services, spoke about the laboratory response to a water terrorism event, a welcome addition to a conference geared largely for water program administrators.

Conferees agreed that resources are needed to enhance water security, to increase laboratory capacity, and to develop new water screening protocols and detection tools. The Environmental Protection Agency (EPA) announced it is developing emergency response plans pertaining to the water supply, in order to make systems secure as soon as possible.

Various action items emerged from the conference, including the need to a) develop protocols to ensure the safety of workers collecting potentially contaminated water samples, b) achieve consensus on the process of collecting confirmatory test samples, c) develop a suite of tests that can be used at any time of day, d) develop screening standards for chemical threat agents, and e) establish open communications with all those involved with water security.

More information on the conference is posted on the “members only” section of the APHL Web site at www.aphl.org (under “documents of interest”). Interested readers may also contact Jennifer Liebreich, APHL’s senior manager of environmental health, at jliebreich@aphl.org or 202.822.5227, ext. 236.
APHL MEMBERSHIP APPROVES NEWBORN SCREENING POLICY STATEMENTS

APHL’s voting membership has approved two newborn screening policy statements drafted by the association’s Newborn Screening and Genetics in Public Health Committee. The first of these—“The Role of the Private Laboratory Sector in Public Health Newborn Screening Programs”—posits that private sector laboratories should be limited to contractually prescribed arrangements for state public health newborn screening testing. That is, private sector laboratories should be prohibited from describing laboratory testing for newborns as public health services in the absence of specific written contracts with public health entities. This is not to suggest that private sector laboratories cannot offer test modalities to the newborn population, but that such tests must be clearly described as being distinct from any public health mandated program and therefore outside the state’s responsibility for tracking and case management.

The second policy statement—“Parental Consent in Public Health Newborn Screening Programs”—states that explicit parental consent is not required for mandated public health newborn screening when “the panel of screened for conditions is limited to those of medical consequence which when detected in the newborn period can be treated so as to limit the medical consequences of the condition.” However, the statement notes that “parental and provider education must be an integral part of the program even where documentation of consent is not required,” and that in all cases any parental consent or dissent obtained should be clearly documented and maintained as part of an infant’s newborn screening program record.

Moreover, where programs elect to include new assays or conditions that cannot be fully analytically and clinically validated to established program standards or have unknown clinical utility, “explicit consent may be required under state statutes or policies and should be required in the spirit of informed participation in medical procedures of limited or unproven benefit.”

The Newborn Screening and Genetics in Public Health Committee is in the process of drafting additional policy statements. For more information, contact Jeff Jacobs, Policy and Planning Committee staff, at jjacobs@aphl.org or 202.822.5227, ext. 216.
APHL EID Fellows Complete HazMat and BT Response Training

The events of last fall made clear the need for certified, highly-trained laboratory personnel to prepare for and respond to biological and chemical terrorism threats. APHL’s emerging infectious diseases (EID) fellows worked alongside staff in their host laboratories throughout much of the early crisis, and the association recognizes the role fellows may be able to play in future bioterrorism (BT) response operations.

In April two EID fellows traveled to Edison, New Jersey, to participate in the Environmental Protection Agency’s specialized, one-week “Hazardous Materials Incident Response Operations” training course. Class VI Research Fellow Sandra Smole—from the Massachusetts Department of Public Health State Laboratory—and Class VII Training Fellow Jennifer Kleene—from CDC’s Influenza Branch, Division of Viral and Rickettsial Diseases—joined participants from the EPA, US Coast Guard, National Oceanic and Atmospheric Administration, and local fire departments for training on hazardous materials and BT response.

The course began with lectures on the formation and operation of an incident response team, regulations for dealing with toxic substances, proper use of safety gear and reading equipment, chemical detection and identification, safe exposure levels, and hazardous waste cleanup.

Participants were also trained to work in protective clothing and gear. Kleene described the full Level A hazardous materials (HazMat) gear as “a fully encapsulating suit.” She said, “In addition to a huge bulky suit, you also have several pounds of SCBA (Self Contained Breathing Apparatus) gear attached to your body, and your hands are shoved into three layers of gloves. It takes 10-15 minutes to get fully dressed, and once you are in, you have very limited line of sight and movement.” In one lab participants donned SCBA gear and learned to communicate over handheld radios. In another, they were taken outdoors to navigate an obstacle course that involved climbing ladders, walking across a flatbed truck, overlapping hurdles, traversing a tunnel, and maneuvering through tires. Finally, participants were given a soccer ball. Kleene said, “Imagine for a moment 14 people in large, bulky yellow suits floundering around an open field chasing after a small rolling object that they can barely see. The several people who stopped to watch this event...were laughing so hard that tears were coming out of their eyes.”

In the second half of the course, students were divided into teams to simulate HazMat reconnaissance missions. Participants set up a command post and operations center, and wrote a health and safety plan for the site. Each response team included a site supervisor, site recorder, chemical officer, health/safety officer, decontamination line staff, entry personnel, and security personnel.
EID FELLOWSHIP NEWS

APHL Selects Eighth Class of EID Fellows

On June 17 and 18, APHL and CDC staff gathered in Atlanta to interview the next class of emerging infectious diseases (EID) fellows. Representatives from APHL member laboratories (including the California Department of Health Services, University of Iowa Hygienic Laboratory, Michigan Department of Community Health, Virginia Division of Consolidated Laboratory Services, and New York State Department of Health) spoke about fellowship opportunities in their states, and 59 prospective training and research fellows were interviewed for places in the program.

APHL is pleased to announce this year’s incoming class will include five post-doctoral research fellows and thirty bachelor’s/master’s level training fellows. The association looks forward to working with these fellows, member laboratories, and CDC as the 2002 fellowship program begins.

Current Fellow Activities

Though many of our Class VI research fellows and Class VII training fellows are approaching the end of their fellowship terms, their work is definitely not slowing down!

Ten EID fellows attended the 102nd annual meeting of the American Society for Microbiology, held this past May in Salt Lake City, Utah.

Two fellows presented posters at the conference. Class IV International EID Fellow Vladimir Chulanov presented “Molecular Epidemiology of Hepatitis D Virus among Injecting Drug Users in Moscow.” Chulanov works at CDC’s Division of Viral Hepatitis. Class VII Training Fellow Josh Courtney presented “Molecular Characterization of Anaplasma phagocytophila and Borrelia burgdorferi in Pennsylvania Ixodes scapularis ticks.” The manuscript is in review for publication in the journal Emerging Infectious Diseases. Courtney works in the Division of Viral and Rickettsial Diseases at CDC.

Vladimir Chulanov stands next to his poster at ASM’s 102nd annual meeting in Salt Lake City, May 2002. Josh Courtney (right) and his mentor Robert Massung at their ASM poster presentation, May 2002.
APHL members from 38 states met with state and federal food laboratorians at the workshop “Counter-Terrorism: A National Integrated Laboratory Response,” in Portland, Oregon, June 19-22. The workshop was sponsored by the Association of Food and Drug Officials (AFDO) and the Food and Drug Administration (FDA) Office of Regulatory Affairs to identify and promulgate best practices for an effective laboratory response to a terror attack involving the US food supply. However the workshop also highlighted a number of issues and necessary infrastructure upgrades that must be addressed to assure an integrated, national response to foodborne and agricultural terrorism.

For example, Art Liang, director of CDC’s Food Safety Office, noted that during the anthrax crisis last fall, the bulk of Laboratory Response Network (LRN) testing was done on environmental rather than clinical samples. Since health officials never anticipated that the network would handle a large volume of environmental samples, they must now examine previously unasked questions. Do valid protocols even exist for testing the variety of matrices possibly encountered in environmental samples? How can a laboratory prioritize environmental samples to conserve scarce resources, identifying in turn those that are serious, infeasible, frivolous, and dangerous? What happens when there is political pressure to circumvent triage guidelines?

In both workshop and hallway discussions, participants emphasized the need for:

- Validated public sector protocols for sampling biological and chemical agents in a variety of food matrices.
- Techniques to screen samples to detect potential hazards (e.g., explosives).
- Interoperable data systems that address intellectual property and global trade concerns.
- Adequate information about chain-of-custody procedures, personnel clearance pathways and background checks, and continuity-of-operations plans.
- Level A connectivity, or ways to gather and coordinate information with clinical laboratories. It was noted that if Level A labs serve as screeners, they must employ methodologies that maximize sensitivity and prevent false negatives, thereby increasing the occurrence of false positives. In order to maintain public confidence in the event of false positives, communications plans must be pre-arranged and followed diligently.

As the workshop concluded, it was evident that the Laboratory Response Network for Bioterrorism Preparedness was the most mature of existing laboratory response systems, despite the need for further development of its environmental sample test capabilities and chemical terrorism preparedness. It was left to future discussion to determine whether or not food, veterinary, and agriculture sampling can or should be integrated into the existing LRN or developed independently.
APHL Survey Finds Public Health Laboratories Lack Resources For Optimal BT Preparedness

Preliminary results of a survey of state public health laboratory bioterrorism (BT) coordinators finds that, as of last December, public health laboratories were not fully equipped to respond to a large-scale biological terror attack. Findings highlight the need for substantial upgrades in laboratory infrastructure, and hammer home the challenge of recruiting and training a public health laboratory workforce with adequate people and skills to handle future crises.

Of the 47 states and US territories that responded to the survey (of 57 queried), fully 85 percent reported that the need to perform anthrax-related tests last fall impacted routine laboratory work, creating significant delays in testing for tuberculosis, sexually transmitted diseases, and other conditions. Most respondents reported needing multiple physical facility upgrades in areas including specimen receiving, air handling, and -70°C freezer capacity.

Only half the respondents indicated that their states had intra-state sample courier systems, but many noted that these systems were limited in terms of operational hours or the types of specimens they would handle, and that some systems were threatened by state budget cuts. Approximately 75 percent of respondents stated the need for a variety of biosecurity upgrades. Ten respondents (8 states and 2 territories) noted that they lacked BioSafety Level 3 (BSL-3) capability.

Almost half of respondents reported that they had no doctoral-level molecular scientists on staff. And virtually all (98%) noted the need for staff overtime during the height of the anthrax crisis last year, with more than half reporting that this overtime burden was “extreme.” Two-thirds of respondents indicated their laboratories lacked adequate administrative staff to manage the emergency response to the anthrax crisis, and noted the need for additional staff to handle managerial, clerical, information, communications, training and worker safety activities.

Thirteen states reported having only one laboratorian trained to perform confirmatory testing for one or more Category A bioterrorism agents, including *B. anthracis*, *Y. pestis*, *F. tularensis* and *Brucella* sp. One territory indicated it had no one able to perform this function. Ten respondents said their facilities had no laboratorians trained to perform real-time polymerase chain reaction (PCR) assays for BT agents last year. (However, since then the CDC has completed the relevant training in all 50 states.) A large majority of respondents (81%) noted that their departments had no staff dedicated to increasing connectivity between public and private laboratories, a function mentioned as a critical benchmark in guidance to states in applications for CDC cooperative agreement funds for Focus Area C (funds that were released June 2002).

More than three-fourths of respondents noted they had sponsored some Level A training in their state or territory. For example, 24 had held a workshop co-sponsored by the National Laboratory Training Network. All respondents indicated that they would participate in repeat Level B training if offered by CDC.
APHL Staff Present At Third National NEDSS Stakeholders’ Meeting

APHL program staff Doug Drabkowski and Helen Regnery moderated a session at the Third National Electronic Disease Surveillance System (NEDSS) Stakeholders’ Meeting—convened in Atlanta, GA, May 8-10. The session explored the positioning of public health laboratories within NEDSS and led to the identification of specific NEDDS-related activities public health labs should try to undertake within the next six months:

- Incorporating quality assurance and quality control of data into electronic information systems.
- Incorporating validation of data from clinical, hospital, and independent laboratories into electronic information systems.
- Assuming a major role in maintaining and updating laboratory related codes (LOINC/SNOMED/cross walk tables).
- Implementing electronic laboratory reporting.
- Reexamining the data flow in state health departments in light of bioterrorism threats (i.e., achieving a common portal of data entry into a health department repository with common access by epidemiologists and laboratorians).

Other meeting highlights include a talk on bioterrorism and NEDSS by CDC’s John Loonsk, a presentation on 21st Century public health surveillance tools (by Gianfranco Pezzino, the Kansas state epidemiologist), updates on NEDSS base system pilot testing, and software demonstrations. A full day was devoted to the topic of information technology infrastructure and preparedness for terrorism. The results of pre-meeting workshops on “Public Health Information Technology Functions and Specifications for Emergency Preparedness and Bioterrorism” were discussed in concurrent sessions followed by a panel discussion (see www.cdc.gov/cic/functions-specs). Finally, the application of NEDSS standards to areas beyond infectious disease was explored in a plenary session addressing Medicaid, electronic vital records registration and messaging, and national tracking of environmental public health data.

Over 400 people attended the conference, including a record number of laboratorians and health officials expressing interest in the role of public health laboratories within NEDSS.
In Florida, the site of the first anthrax attack, Pillai’s laboratory was inundated during the crisis. Once news of the positive identification of *B. anthracis* became public, the Florida Bureau of Laboratories received as many as 400 suspect samples a day. Processing all of these samples proved difficult and time consuming, especially since laboratorians had to be cautious of chemical agents, gases, radiological agents, and explosives in each new mystery package they received.

According to Pillai, this experience taught him to “expect the unexpected” and to be well prepared for future emergencies. In order to handle a large volume of incoming samples, he suggested developing an algorithm to prioritize lab specimens. In addition, he recommended that state public health laboratories 1) become part of the Laboratory Response Network (LRN), 2) participate in validation studies, 3) train laboratory scientists prior to an event, 4) establish capabilities and capacity, and 5) plan ahead.

In New York, Wadsworth Center scientists were immediately called into action after two of the hijacked airliners crashed into the World Trade Center (WTC). Despite overtaxed communication systems, laboratorians went to work measuring environmental contamination. Around the World Trade Center site, they found asbestos in storm water runoff, dioxin in debris sediment, and tritium in the water. The basement of the World Trade Center had flooded and experienced a 30% increase in tritium levels due to materials released from the exploded planes. In addition, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated dibenzodioxin and dibenzofuran (PCDDs), two toxic environmental pollutants, were detected in WTC emissions.

These findings led the Wadsworth Center to initiate a biomonitoring project to track the long-term health effects of exposure to these substances. Scientists believe this type of research is critical to analyze and prepare for the long-term repercussions of BT attacks. The Wadsworth Center has also increased surveillance of drinking water.

Doug Anders with the FBI-HQ Laboratory Division, reported that his agency learned many lessons from its investigations of the four hijacked planes—the Pentibom investigation—and of the anthrax emergency—the Amerithrax investigation. Like Eadon, FBI specialists realized that the plane crashes posed significant public health risks even after the immediate loss of life, due to the accumulation of air particulates (dust and asbestos), building chemicals (cleaning solvents, freon, etc.), residual jet fuel, and structural debris. These problems would necessitate the type of ongoing chemical monitoring that the Wadsworth Center was already performing.

Anders said even though the country was relatively well prepared to deal with an anthrax attack, the FBI recognized that the United States lacks basic information about many BT agents and needs improved, validated rapid tests, as well as enhanced public health infrastructure (staff, equipment, and technology). In spite of some of the weaknesses exposed by the crisis, Anders, like Pillai of Florida, spoke about the importance of participating in the LRN and praised network laboratorians for superlative work. The FBI, he said, deduced that LRN labs were well prepared to identify *B. anthracis*, but he worried that they were not prepared for the large number of samples they received from credible and non-credible threats. He stressed the need for future preparedness by securing needed public health resources, developing strategies for surge capacity, and maintaining dialogues among LRN partners.
The Utah state public health laboratory exemplifies the value of preparedness. Utah’s Charles Brokopp spoke about the challenges the Utah public health laboratory system faced during the 2002 winter Olympics and the steps it took to prevent an assortment of possible catastrophes. Because it was such a high profile event, the winter Olympics was considered a prime terrorism target. The games, which took place from February 8 through 24, attracted between 70,000 and 100,000 attendees each day, including 3,500 athletes and 15,000 members of the press. The site encompassed ten competition venues—five outdoor and five indoor.

The planning and preparations for such a momentous event began in 1997 with many agencies and organizations participating. Post-anthrax, however, the challenges became more intense and the state public health department responded by expanding surveillance and improving laboratory capacity in the area. The emergency scenarios that were of particular concern included chemical terrorism, trauma, radiation from a “dirty bomb” and release of biological organisms, such as smallpox. To prepare for these sorts of attacks, the Utah public health system stockpiled a large volume of medical supplies, including 12,000 doses of cipro.

Although no major crisis occurred, a false-positive finding for anthrax in a sample from a Salt Lake City airport caused several flights to be diverted and the discovery of four mysterious vials in a building prompted short-term worry. According to Brokopp, the biggest lesson learned from the Olympics was that many partners are needed to plan for and address diverse threats. The extensive preparation that went into the Winter 2002 Olympics reveals that with proper prescience and planning, the prevention and management of BT events is possible.

One resource available to help states plan ahead is the newly established Office of Public Health Preparedness. As Michael Ascher explained, the OPHP charter mandates three things: 1) that Health and Human Services elements be included at OPHP 2) that OPHP be the single point of contact for other federal departments in the event of a public health emergency, and 3) that OPHP assume the lead in planning and determining funding for the BT grants to be awarded to states this year.

Ascher announced that the OPHP 2003 budget contains $1.7 billion for the National Institutes of Health, funding for six to ten centers of excellence for biodefense and emerging infections, funding for new state or federal clinical and primate laboratory facilities, and monies to upgrade facilities to Biosafety Levels 3 and 4. Ascher also spoke of the need to refine the national smallpox vaccination policy and plan, to enhance facility biosecurity, and to standardize the LIMS (Laboratory Information Management Systems) in order to facilitate the communication of laboratory findings. During this relative lull, the OPHP is making such preparations to brace itself and the country for future attacks.

Nearly all plenary speakers underscored the need for enhanced and effective communication. Eadon discussed the difficulties that his lab faced when constantly interrupted communication lines rendered email systems and telephones nearly useless. Ascher spoke about the need to improve the dissemination of lab results between labs and also stressed the importance of communication among LRN labs. And Schable, with the CDC’s BT Preparedness and Response Program, averred that, absent effective communication, specimen overloads will be unmanageable in a time of crisis, despite other advance preparations. “Surge capacity remains critical and will be especially important if an organism
At various times, Joseph has served in leadership positions within the American Society of Microbiology; APHL and its predecessor (the Association of State and Territorial Public Health Laboratory Directors), the National Center for Infectious Diseases, US National Committee/National Academy of Sciences/International Union of Microbiological Societies, and Maryland Epidemiological Society.

Yet despite his far-ranging interests and national and international commitments, Joseph’s microbiological home has long been the Maryland state laboratory in downtown Baltimore. Asked to name the defining moments of the nation’s laboratory system during his lengthy career, Joseph’s answers invariably lead back to Baltimore.

“Maryland had the first screening program for lead poisoning,” he pointed out. “(Maryland laboratorians) adopted a method developed in Germany and started here in the 1930s. Ours was limited primarily to Baltimore City, because that’s where we thought the problem was. Maryland was the only state doing (lead screening) for almost two decades . . . before it was (broadly) recognized as an important environmental health problem for children.”

Similarly, he noted, Maryland was the first state to begin routine screening for cervical cancer. “In 1946,” Joseph said, “Dr. Papanicolaou developed the pap smear. The lab sent staff up to Papanicolaou’s lab in New York to learn how to do the test and Maryland began pap screening in 1947. This was a very important program because . . . it was quite a few years for other states to introduce it.” The Maryland Department of Health and Mental Hygiene processed 100,000 pap tests/year for a while. “They had to put a moratorium on it once or twice because we couldn’t handle any more,” Joseph recalled.

Another “first” for the Maryland state lab was newborn screening; Massachusetts and Maryland being the initial states to institute the procedure on a broad scale in about 1964, according to Joseph.
A public health problem unanticipated during much of his career, Joseph said, is radiation exposure. “If they detonate a hydrogen bomb in China, after about a week, you can tell right away. Radiation is detectable (in the US) in milk, in cattle, vegetation, and foods, although not very significant amounts.” The water mains that have been in place for years—as in older developments in Annapolis and Howard County—he said, have accumulated deposits, and some of those deposits contain radioactive materials. Consequently, the Maryland Laboratories Administration regularly tests for radiation and uranium breakdown products, including radium 226 and 228.

The Maryland lab, explained Joseph, is one of the few large centralized state labs in the country. Occupying 217,000 square feet of floor space, the Maryland Laboratories Administration actually comprises about 70 individual laboratories. “We do work for the Maryland departments of natural resources, agriculture and environment, for hospitals, and for the medical examiner’s office,” observed Joseph.

There is a laboratory devoted to volatile organic compounds. Another for inorganic compounds. An occupational health lab. A water lab. An air quality lab. A radiation lab. And these just cover the environmental area. Because Baltimore City has one of the highest rates of HIV/AIDS in the nation, there is a lab devoted exclusively to HIV serology, and another dedicated to HIV antigen detection and gene sequencing. There are also labs for food safety, virology, newborn screening, respiratory viruses, and more.

At the moment, anthrax and biosecurity are top priorities for Joseph and his colleagues. When anthrax was detected in Washington, DC, last fall, the Maryland state lab was at the eye of the storm. “We certainly weren’t prepared for that large workload,” he said. “We processed over 2,000 (anthrax) samples in a two-month period, in addition to our regular workload.” For roughly three months, laboratory staff worked nonstop to provide information to emergency responders, criminal investigators, and individuals who may have come into contact with anthrax spores.

Because many of the Capitol Hill employees and Brentwood postal workers who were potentially exposed to anthrax resided in Maryland, the lab had to modify its test reporting procedures. “We have to make sure that local health departments have a copy of test results of samples taken from local residents, in addition to the FBI or other agencies that submitted the samples,” explained Joseph.

As a result of the anthrax emergency, the state is investing half a million dollars in new laboratory security measures, much of it funded through federal bioterrorism grants. According to Joseph, there will be guards in the building lobby, electronic locks that record entry times on laboratory doors, cameras in labs and around animal facilities and depositories, and a single point-of-entry for all lab samples, which will now be monitored for radiation, explosives, and other potentially harmful agents.

In addition, 17 employees are receiving a full course of anthrax vaccinations. Local FBI agents and hazardous materials teams are being trained on the safe handling and packaging of laboratory specimens. And the lab has acquired a $70,000 piece of equipment to infuse lab chambers with a 35 percent hydrogen peroxide disinfectant gas. (“We tested it,” said Joseph. “It does a good job, and it’s less toxic than paraformaldehyde.”)

What is the biggest challenge this dean of laboratorians now faces? “Unfortunately,” averred Joseph, “it is funding.” Maryland, like many states, faces a budget shortfall, and public health is one of the areas being cut. There is a freeze on all new hires and all new laboratory instrumentation. Joseph said the lab may begin asking its clients—hospitals and state agencies—to provide funding to cover the cost of laboratory reagents and essential instrumentation.

Yet, if anyone can steer the state lab through these difficult times, it is Joe Joseph. In a telephone
Two-thirds of respondents reported that they maintained a database of all Level A laboratories in the state or territory. Nineteen confirmed having rapid communication methods, such as blast-fax or email, to send urgent messages to Level A laboratories, and, of these, 16 reported using these systems last fall. However, among those lacking a system for rapid outreach to Level A laboratories last year were six respondents affected by confirmed anthrax cases.

Preliminary survey results were reported at the APHL annual meeting in June by James Pearson, chair of the association’s Emergency Preparedness and Response Committee and deputy director of Virginia’s Division of Consolidated Laboratory Services. Respondents include many of the 81 Level B Laboratory Response Network laboratories.

The survey was conducted by the Association of Public Health Laboratories this past spring specifically to determine the ability of state and territorial public health laboratories to respond to future bioterrorism incidents. APHL plans to repeat the survey at year-end to gauge remaining needs following the first infusion of funds for laboratory capacity for bioterrorism, Focus Area C in last year’s emergency supplemental appropriation. Comparisons will help guide states in their ongoing assessments and in submitting plans for continued funding.

Final survey results will be reported in the next edition of The Minute. The emergency funding made available for Focus Area C and released to states and territories in June should address a number of readiness gaps identified in the preliminary survey results. Still, funding levels must be sustained if states are to address staffing needs and keep pace with the cycle of progress and obsolescence inherent in testing methodology.
Smole described the operations: “The first site involved a pitch black room in a warehouse with numerous leaking barrels, radioactive source, and a ‘dead body’ in a partially opened barrel. I was one of two entry teams suited up with flashlights, radios, and detection equipment, and proceeded into the room. We reported what we found to the command center and they began to diagram the room with the chemicals and the various readings we reported on our equipment. After leaving the site, we proceeded through a decontamination line that involved proper decontamination and removal of our suits. The last day, our whole group set up for a second site in an open field (with) more leaking and rusted barrels, metal gas cylinders, an abandoned truck, and children playing near the site. I was the site recorder and sat in the command center and recorded data incoming from the entry teams. For this last site, they arranged for the kids to run onto the site and for one of the entry members to fall and ‘break’ their leg. The team had to remove the entry person fully gowned on a stretcher and take them through the decontamination line.” The exercise also included simulated briefings with staff from The Washington Post, the Associated Press, and an irate city mayor.

Both Smole and Kleene found the training course to be interesting and beneficial. Smole said she “got a good feel for what it was like to work with complete strangers to fulfill a common task in a safe manner.” Kleene felt she “not only learned a lot about how to set up and organize a recon mission, but how to deal with many organizations at once, and how to deal with public and media outlets.”

APHL thanks these two fellows for their commitment to meeting today’s public health challenges. As future public health laboratory leaders, APHL is determined to provide EID fellows with the best and most relevant training possible. We are exploring the benefit of providing this specific training to future EID fellows.
Following an outbreak of meningococcal disease in Burkina Faso, Arijana Boras spent two weeks in March doing fieldwork in the African nation. She supported the combined CDC and World Health Organization longitudinal surveillance efforts during the outbreak. Boras is a Class IV International EID Fellow in the Division of Bacterial and Mycotic Diseases at CDC.

Hualan Chen presented the poster “Generation and Characterization of H9N2 Cold Adapted Reassortant Virus as Vaccine Candidate” at the 5th International Symposium of Avian Influenza in April in Athens, Georgia. Chen is a Class III International EID Fellow in the Division of Viral and Rickettsial Diseases at CDC.

A paper by Class III International EID Fellow Jane Costa was accepted for publication in the American Journal of Tropical Medicine and Hygiene. “Ecological Niche Modeling and Differentiation of Populations of Triatoma brasiliensis Neiva, 1911, the Most Important Chagas Disease Vector in Northeastern Brazil” describes a study carried out in collaboration with the University of Kansas and represents the first application of genetic algorithm of rule set prediction (GARP) in the field of epidemiology and disease transmission. Costa also recently reviewed two manuscripts for Memorias de Instituto Oswaldo Cruz, a Brazilian scientific journal.

Sarah Levin recently finished screening more than 250 carriage isolates from a village in western Alaska for the presence of H. influenzae-specific and serotype-specific genes. She also traveled to Fairbanks to observe the activities of the state virology laboratory in preparation for a rotation at the Alaska State Public Health Laboratory. While in Fairbanks she assisted on a necropsy of a caribou suspected of having rabies. During her rotation at the state laboratory, Levin worked with former EID Fellow Lynne Lucher to develop a real-time polymerase chain reaction (PCR) assay for Bordetella pertussis. Levin is a Class VII training fellow in a joint program between CDC’s Arctic Investigations Program and the Alaska State Public Health Laboratory.

The April 24 issue of the Journal of the American Medical Association recognized the work of EID Training Fellow Pritha Sen. The article, entitled “Researchers Wrestle With Spread and Control of Emerging Infections,” cites the field trial work Sen is conducting within the Division of Parasitic Diseases at CDC.

EID Fellow Alumni News

Although Class VI EID Training Fellow Ray King’s fellowship ended in May, he remains at the Division of Vector-Borne Infectious Diseases in Fort Collins, Colorado as a visiting fellow. He continues to be involved in fieldwork for the Atlantic Flyway study for West Nile Virus. A joint effort between the CDC and the US Geological Survey to discern migrations patterns of West Nile Virus, the study has followed the virus’ westward migration. King recently traveled to southern Louisiana to sample mosquito populations in Bogue Chitto National Wildlife Refuge and Big Branch Marsh National Wildlife Refuge.
STAFF NEWS

Cicely Garrett joined APHL on June 11 as general ledger accountant. Cicely comes to the association from MIL Corporation, a government contractor. She has extensive experience with spreadsheet development, financial statement analysis, and software training. Cicely graduated in May 2001 from Georgetown University with a BS in business administration.

Emily Mumford joined APHL on June 14 as membership coordinator. Emily graduated cum laude from Duke University with a degree in English. Emily also has sales experience and has worked for the Charleston, SC Convention and Visitors Bureau.

ANNOUNCEMENTS

Working with Communities for Environmental Health Satellite Broadcast

Plan to watch a free satellite broadcast, “Working with Communities for Environmental Health,” which will air on Thursday, September 12, from 1:00 - 3:30 P.M. (Eastern Daylight Time). This program, rescheduled from November 29, 2001, is presented by the Agency for Toxic Substances and Disease Registry, the Centers for Disease Control and Prevention, and the Public Health Training Network. Continuing education credits (CME, CNE, CEU, and CHES) will be offered. Participants will learn ways to increase their effectiveness when planning, implementing, and evaluating work with communities. Registered participants will receive a free health education planning kit after the program.

This program will be available via a live webcast through the program website, www.phppo.cdc.gov/phtn/envedu/, and also at satellite downlink sites. Downlink site registration is open and downlink sites are needed so that participants across the country will have a choice of locations for viewing the live satellite broadcast. You can register now as a downlink site administrator/facilitator. Downlink site administrators/facilitators have minimal responsibilities related to preparing and staffing a downlink site for the live broadcast. To register and learn more about these responsibilities, go to www.phppo.cdc.gov/phtn/envedu/, select the link under “Registration Instructions,” and select “New Administrator.” Individual participant registration will begin on August 12, 2002, and will be available at www.phppo.cdc.gov/phtn/envedu/. Registration will continue through the actual broadcast date of September 12, 2002.
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