In the Aftermath of Hurricane Katrina

Salvaging Lessons from the Ruins (page 3)
A Message from the President

Stemming the Workforce Crisis

Robert Wood Johnson Foundation Grant to Help

As most of you know through your own experiences, American public health laboratories face a critical workforce situation. These staff shortages and training deficits are not isolated, nor are they temporary. We are all feeling the squeeze, and every indicator says that the situation is about to take a staggering turn for the worse.

APHL leadership has been concerned for awhile now. Workforce is the number one issue in our association's strategic plan for 2006-2009. Surveys have shown that we should expect a 26% vacancy rate for state laboratory directors in the next year, with the turnover rate skyrocketing in successive years. Our states have appointed 16 new laboratory directors in 2005 alone. Skill sets in the candidate pool are inadequate for the complex, evolving positions opening up at the helm of public health labs. Our workforce is aging quickly, our salaries aren't competitive, our field is not emphasized in post-graduate programs, and the public usually doesn't understand us.

We know all of this now. So what are the answers? How do we fix something that seems to be spiraling downward quickly? Part of the answer is establishing public recognition of the problem. APHL's National Center for Public Health Laboratory Leadership was formed in 2002 to tackle these issues on behalf of the laboratories, which have been responsible for communicating this crisis to officials and agencies that can help. But action is the important next step. Now that we have research to back up our claims, where do we go? We currently have a promising educational program for new laboratory leaders. But there is much, much more to be done, and, as ever, limited funding to achieve these goals.

I am excited to be able to share with you that APHL has secured a one-year grant from the Robert Wood Johnson Foundation for more than $200,000. Several months ago, Scott Becker and I met with Pamela Russo, a senior program officer at the foundation, to outline the draft of workforce needs in our field. At her encouragement, APHL's new director of development, Wilma Brooks, applied for a grant; these funds are already in hand. The money will go a long way to helping us achieve the goals of our Public Health Laboratory Leadership Workforce Initiative.

This new initiative will be administered through the National Center for Public Health Laboratory Leadership and will focus on three distinct goals based upon immediate, intermediate, and long-term needs. The money will support an orientation program for new lab directors, including educational and mentoring opportunities. It will help create a pool of emerging leaders through training. And it will aid in the establishment of a career pathway from academic institutions through continuing education and structured accreditation. All of this will be managed by a member-driven, three-to-five year strategic plan that is already underway.

The time for action is here. I petition all of you to attend to this process, to help ensure that our high professional standards will be continually met in the future. APHL, our national association, is the natural home for this initiative; members and staff are working on our behalf to shore up and repair our overburdened, understaffed laboratories. Thanks to partners like the Robert Wood Johnson Foundation, it won't be long before we begin to see the tides rolling back.

Katherine Kelley, DrPH
Director of Public Health Laboratories
Connecticut Department of Public Health
Salvaging Lessons From the Ruins of Katrina

"Blink—

one moment here
one moment gone."

Jean Bass
"Weeping Into Water"
Only the Sea Keeps: Poetry of the Tsunami

When Hurricane Katrina ripped through the US Gulf Coast in late August, the Category 4 storm largely spared the main branch of the Louisiana state public health laboratory, situated on the 7th and 8th floors of a New Orleans building just a few blocks from the Louisiana Superdome. Winds in excess of 100 miles-per-hour blew in a window in the volatile organics laboratory—meaning the probable loss of the laboratory's gas chromatography mass spectrometers—but the rest of the facility was pretty much unscathed. Until the next day, that is, when 20 feet of floodwater from Lake Pontchartrain inundated the basement levels, knocking out all the equipment needed to operate the building.

The facility—fully functioning the day before the storm hit—will probably never be in use as a laboratory again. Louisiana’s public health laboratory director, Stephen Martin, said in an interview in early October, “They tell us it will be 8 to 24 months before they have services back in the building. We hope some of the equipment will be usable, but we honestly don’t know at this point because we haven’t powered things up” (and high humidity may have taken a toll). With no working elevators, it will be a trick just to devise a means to remove bulky instruments from the building.

In the meantime, Martin—now working from the state emergency operations center in Baton Rouge—is overseeing efforts to lease warehouse space where a temporary laboratory can be established until a permanent new facility is built. Construction on a planned new building actually began just four weeks before Katrina struck, but its completion is now just one priority among many, Said Martin, “We still have a lot to do. We still don’t have a functioning laboratory. We’re grateful for people helping us out, but eventually they’re gonna want to have us out.”

The laboratory situation in Louisiana—and to a lesser degree in Alabama and Mississippi—shows that even with advance warning and advance planning, every disaster is unique and invariably presents unanticipated challenges: in this case, the sheer scale of the devastation, the complete loss of communication systems and the widespread evacuation of public and private sector laboratory staff and other emergency personnel. As APHL Executive Director Scott Becker said, “The stunning amount of damage in the region meant...”

We finally got to a point where we kinda had things moving forward—not that things were good—then [Hurricane] Rita came through...We had redirected some testing to Lake Charles to cover New Orleans and I had to redirect it a second time.

--Dr. Stephen Martin

It Is Impossible to Overstate the Importance of Planning

The day before Katrina came ashore, Martin and his staff disconnected the power to the laboratory in New Orleans and covered most equipment in plastic. “We had a response plan,” he said, “where I and the assistant director went to the Shreveport [branch] laboratory and remained there as a point of contact for staff.”

But the response plan did not foresee the immediate and virtually complete disappearance of telecommunications, with land lines, cell towers and satellite relay stations all in disarray. While the incident command center for the Louisiana Department of Health and Hospitals was in place in Baton Rouge, the state capital, Martin was in Shreveport trying to locate staff and to relocate laboratory services. “We thought Shreveport certainly wouldn’t be hit by a major storm that hit New Orleans and that turned out to be correct,” he said, “except that I still couldn’t communicate with Baton Rouge,” meaning loss of contact with the public health leadership and with the laboratory’s chief clients, the public health program managers whose work was now in limbo (and who in some cases tried to line up alternate laboratory resources without coordinating with Martin).

Then a second problem arose. “We finally got to a point where we kinda had..."
things moving forward—not that things were good—then [Hurricane] Rita came through. That became an issue. We had redirected some testing to [the branch public health laboratory in] Lake Charles to cover New Orleans and I had to redirect it a second time.” As in New Orleans, laboratory staff were evacuated and the city became temporarily unavailable. “We went from four functioning labs to two in a two-week period,” said Martin.

The Louisiana experience illuminates perhaps the most basic lesson from Katrina: that some nightmares do come true, and when they do, the better leaders’ contingency planning and adaptability, the less the resulting chaos. Said Martin, “You’re going to have to have more than one contingency plan, to make decisions and changes on the run. Just having one script doesn’t work.”

Although Martin concedes that “not all the parts” of his system’s emergency response plan played out as expected in the face of extreme circumstances, at least the Louisiana laboratory had a plan to deal with the loss of one of its four branch facilities. It is unclear how many other state and local public health laboratories do. A recent request from APHL for copies of members’ continuity-of-operations (COOP) plans elicited just two responses. Becker said, “That was a huge lesson.” APHL’s Emergency Preparedness and Response Committee now intends to develop either a model COOP plan or a framework that members can use to develop their own plans.

For his part, Martin outlined several items to consider before the next emergency:

- Diversifying communication systems.
- Establishing time limits “to make sure people call in so we can locate [displaced laboratory personnel] a little bit quicker than we did this time.”
- Asking supervisory laboratory staff to remain nearby when disasters loom. “Many people went to Texas or Georgia,” Martin said, “which is too far away to help us get organized.” In the future he said he will ask senior staff to make arrangements to remain within the state in the event of a hurricane greater than Category 1, rather than leaving relocation to their discretion.
- Creating Greater Redundancy in Laboratory Services.

Of course, some outcomes are hard to plan for even if they can be reasonably foreseen. Martin said roughly 80 of his staff members are now homeless. Many of these people will eventually be able to repair and re-inhabit their homes, but, he noted, “I have a significant number of people whose dwelling doesn’t exist anymore.” Of all the problems dogging the Louisiana public health laboratory, Martin calls housing his chief challenge: “Finding temporary housing for this number of people is a major, major impediment. I have a lot of people who would come back and would work if they could find a place to live... I can’t really push it too much because I have nothing to offer them.”

Cost-Cutting Measures May Leave Labs Vulnerable To Disruptions in Service

Throughout a history of inconsistent funding and under-funding, public health laboratories have consolidated services and postponed facility upgrades in an effort to focus resources on priority public health work. While these strategies have often achieved that goal in lean fiscal years, the post-Katrina upheaval in laboratory operations demonstrates their inherent risks.

Louisiana’s past consolidation of services, said Martin “worked for what it was supposed to do, to make the lab more economical.” But it left the state with no back-up facilities for newborn screening or environmental chemistry. Moreover, the only BSL-3 laboratory space—a requirement for tuberculosis testing—was in New Orleans (although work was underway to bring the Shreveport branch laboratory up to BSL-3 standards). All of these single-source services had to be passed off to mobile testing units, federal laboratories or state public health laboratories outside of Louisiana.

To the public health system’s credit, these alternative testing sites—although subject to delays—were available in abundance. Nevertheless, Martin said a future goal will be to undo some of the consolidation of the past.

Simplifying Communication to Minimize Confusion

EMAC, APHL Can Help

Perhaps the only good news to come out of the Katrina fiasco was the swift and generous outpouring of help from government agencies, professional organizations, private laboratories and vendors. Martin said, “Everybody that could offered assistance. That was very reassuring in this time of need and it was a very crucial thing to getting services back to people.”

At some point, though, the number of people trying to contact Martin became a problem in and of itself. “When you get 40 calls before lunch,” he observed, “that becomes an impediment to getting things done.” On the other hand, there were some people that Martin really

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ou’re going to have to have more than one contingency plan, to make decisions and changes on the run. Just having one script doesn’t work.

--Dr. Stephen Martin

The APHL Minute
To a degree, these difficulties were emblematic of the general confusion that accompanies virtually any major disaster, especially when communication systems are initially down. As Becker observed from his position in Washington, DC, “Overall the biggest [relief] challenges were coordination and communication, as they always are.”

As in emergencies past, APHL activated its emergency response plan and established an internal team to do whatever it could to support the relief effort. Invariably this meant helping to manage the flow of information.

In the immediate aftermath of the storm, Becker was one of the first outsiders to reach Martin and the directors of the Alabama and Mississippi public health laboratories, and was able to provide “situational awareness” to the CDC. He secured single points of contact for Martin at relevant federal agencies, intervened with the director of laboratory services at CMS to resolve regulatory issues and contacted national USPS officials to redirect New Orleans-bound specimens to Shreveport. By maintaining regular—sometimes daily—contact with the affected laboratory directors and with the CDC director’s emergency operations center (DEOC), Becker and his staff were able to reduce the burden of information management considerably; so much so that a month after the crisis began, Richard Wang, coordinator for laboratory issues at DEOC, averred, “APHL has been instrumental in this entire [response] process, I must say.”

From a laboratory perspective, the immediate needs were relocation of suspended laboratory services and the identification of surge capacity for high-volume work, such as testing molluskan shellfish after the closure of the entire state estuary system. Although a mechanism—the Emergency Management Assistance Compact (EMAC)—is in place to help states acquire just this kind of help, APHL discovered that it is not well-known to the laboratory community. (The EPA inadvertently added to the confusion about payment for relief services by asking environmental testing labs in the surrounding area to agree to a memorandum-of-understanding that would exempt them from reimbursement, contrary to the terms of EMAC.)

To speed relief activities, APHL staff took on the role of facilitators, explaining EMAC to public health officials and coordinating offers of assistance from its members.

In the end, the system worked. The Florida Bureau of Laboratories sent four laboratory scientists and all the equipment, reagents and supplies needed to set up a water testing facility in Gulfport, MS. (One of those scientists, David Beall, also rode with an environmental strike team, passing out clean drinking water and mosquito repellent and placing larvicide in pools of standing water.) The Texas Bureau of Laboratories assumed responsibility for Louisiana’s tuberculosis testing. And the University of Iowa University Hygienic Laboratory took on the testing of 400 newborn screening specimens per day for Louisiana residents. Mary Gilchrist, director of the Iowa laboratory, also arranged to have a toll-free number set up so Louisiana residents could call to verify that babies born between mid-August and mid-September were actually screened.

APHL fielded a half dozen or so offers of assistance from its corporate members. For example, Perkin Elmer provided three months worth of free newborn screening reagents and supplies to Iowa’s University Hygienic Laboratory (for Louisiana testing). And Cepheid offered to refurbish free-of-charge any damaged laboratory equipment that can be refurbished from the New Orleans public health laboratory.

Federal assets also rolled in, including technical advisors from several agencies, a mobile Food and Drug Administration laboratory to test oyster meats in Thibodaux, LA, and at least two mobile EPA laboratories for water testing. Among other things, the CDC:

- Surveyed Louisiana hospitals to determine the number of infants born just before and after Katrina hit, and whether they were screened.
- Issued a national public health advisory encouraging Louisiana parents to call the Iowa 1-800 number to verify the screening status of recent newborns.
- Took on some food safety testing for Louisiana in Atlanta.

“In every case,” said Martin, “I had multiple offers of assistance for the same...
thing... I had more offers of assistance than actually I had need for assistance. That was reassuring..."

Better Coordination Within and Among Federal Agencies Could Hasten Relief Efforts

One of the greatest needs in Louisiana, Alabama and Mississippi in the wake of the hurricane was water testing. The storm triggered a loss of pressure in drinking water systems across the region leaving them vulnerable to microbial infiltration and prompting boil orders over a large swath of the Gulf Coast. In addition, stagnant floodwaters in this highly industrial area were likely polluted with noxious chemicals and liable to backflow into water systems, seep into groundwater and/or contaminate water treatment plants.

The effort to marshal federal resources to provide urgently needed surge capacity for water testing demonstrates some of the disconnects at the federal level—and between federal and state authorities—that frustrated those attempting to help. Given the priority of water testing, APHL made a concerted effort throughout the early days and weeks after the storm to work with the EPA, the lead federal agency for water testing, to match resources to needs.

But APHL staff reported that the agency was unable to provide clear information about the type of water testing being done, mobile resources available or the chemical analytes that needed to be tested for. There was also some confusion about whether the EPA or the CDC Laboratory Response Network (LRN) was responsible for providing water testing protocols. Lauren DiSano, APHL's environmental health program manager, said the association sometimes received conflicting reports from EPA field offices and from state laboratory officials about which was the greater need in each locale: microbial or chemical testing.

In Louisiana, the Amite and Shreveport branch public health laboratories were able to ramp up microbial water testing sufficiently to meet most needs, but the state laboratory system lost its capacity for chemical testing with the loss of the New Orleans branch facility. Yet when a mobile EPA water testing laboratory finally reached the region, on-site staff reported that microbial analysis of drinking water was their "primary mission" until they received further instructions through the agency's chain-of-command. Martin said that some of these disconnects may be attributed to mixed signals coming from officials in the Louisiana Environmental Health Services and from the public health laboratory, but that "all around things could have been handled more smoothly."

Overall these snafus were minor compared to the EPA's massive effort to assist the region. Martin said EPA personnel "have provided us a lot of backup and they continue to provide us a lot of backup," with a recent focus on analysis of lead and copper in drinking water.

EPA spokesperson Kerry Humphrey reported that as of mid-October, 1,382 of the 1,591 drinking water facilities in Louisiana were operational, 67 operating on a boil water notice, 121 inoperative and 21 in an indeterminate condition—a scenario that represents considerable progress since the end of August. She also noted a few exceptional challenges, such as five large oil spills associated with the two Gulf hurricanes and the persistence of floodwaters, which failed to recede of their own accord.

Yet clearly, better coordination at the federal level—and not only at the EPA—would help. Rosemary Humes, APHL's emergency preparedness manager, suggested several lessons for the future:

› Attention to coordination issues beyond terrorism by members of the federal Integrated Consortium of Laboratory Networks (an urgent need since the LRN is designed primarily to respond to acts of terrorism and is not equipped to do double-duty as an all-hazards network as some expect).

› Including someone with public health laboratory expertise on the CDC DEOC laboratory team.

› Enhanced coordination between the CDC and the EPA.

› Designating a single source at each federal agency to coordinate outreach to public health laboratories in disaster zones.

Assisting Sentinel Labs Needs to Be a Higher Priority

For several years, public health laboratory leaders have promoted public-private partnerships and the all-encompassing National Laboratory System in an effort to build bridges between public health and sentinel labo-
ratories. One catastrophe later, it is clear that the public health paradigm does not yet reflexively embrace private sector laboratories as full partners.

Rex Astles, a senior health scientist with the CDC, said that emergencies present “a huge opportunity” for public health laboratories to reach out to the private sector to assess needs and broker resources. “To the extent possible,” he explained, “the model is always for the states to take the lead and that would have been our druthers [after Katrina].”

Instead, Astles—who was tasked with clinical laboratory outreach at the federal level—found sentinel laboratories in some areas overlooked in the aftermath of the storm. He summarized his observations as follows:

- When clinical laboratories were taken out of operation, the public health system was unable to be apprised quickly of it.
- More importantly, the public health system was not primarily concerned with the clinical labs, in part because the state system was disrupted, but also because the National Laboratory System perspective was not the organizational culture in some cases.
- As a result of disruption of several lines of communication, clinical labs were left without a source of information for questions concerning public health testing issues—and sometimes no advocates.
- Messaging to clinical labs needs to take place before evacuation is initiated.

Astles and his staff called 186 clinical laboratories in the hardest hit Gulf Coast areas. Of these, 84 were negatively impacted, 9 were unable to meet clinical needs and 4 were closed. His hope was to link assets to needs through facilitation of local parties (e.g., labs sharing resources with other labs), through national organizations (several of which offered assistance) and/or through the federal Department of Health and Human Services’ (HHS) Katrina relief volunteer list.

One problem that became quickly apparent was a lack of phlebotomists, who, being lower-wage workers, tended to live in flood-prone areas. Astles’ recalled his frustration trying to navigate multiple bureaucracies to tap volunteer laboratory workers from the HHS list to fill this obvious need. His ongoing effort, he said, “is illustrative of the way people think. . . . No one understands that these [volunteers] could go work in clinical labs.” Astles said, “I would love it if we could get even one phlebotomist deployed from the HHS list because that would show that at least somebody thinks it’s a public health issue.”

While Astles was coordinating outreach from the CDC, his colleague, Bob Martin, acting director of the agency’s Division of Public Health Partnerships, volunteered for deployment in the field.

Post-Katrina Reports from . . .

Alabama

Despite extensive flooding and wind damage along the Alabama coast, the Mobile branch of the Alabama Bureau of Clinical Laboratories weathered the hurricane well. William Callan, the state laboratory director, said the hurricane’s minimal impact on the laboratory and the facility’s quick recovery were “not by chance.” He credits the rebound to advance planning and staff dedication. When the laboratory was built, he said, authorities deliberately chose a site in one of the safest areas of the city, with natural protection from wind and flooding. The day before Katrina, he was forecast to make landfall, staff in Mobile packed the laboratory’s ultra-cold freezers with 75 pounds of dry ice. They also slanted containers in the freezer to easily ascertain if temperature-sensitive reagents had thawed and refrozen, notified health care providers of a potential stoppage of services and re-routed specimen deliveries to other laboratories in the state system. These precautions served the facility well. But two snafus were unanticipated: 1) the unreliability of cell phones and pagers for emergency communications and 2) the degree of damage to the Mobile electrical grid. Callan said the Mobile laboratory has an 85 kilowatt generator on-site, but that it was never wired into the building because of cost (roughly $30,000) and assurances from the state emergency management agency that the laboratory would have priority for power restoration in the event of a crisis. Since repairs to the grid took longer than expected, staff manually plugged the generator into an isolated power panel to gain limited operations. Soon however, the facility was providing disaster relief services—including potable water and rabies testing—not only to local residents, but to other devastated areas as well. In the wake of the storm, Callan said he is looking to acquire radio telephones and “reassessing the need to properly integrate the generator into the building.”

Martin was sent to San Antonio, where large numbers of hurricane evacuees were being housed in shelters. Again, outreach to clinical laboratories became an issue.

Said Martin, “There was an assumption that if there was illness [among shelter populations] there would be lab testing. But there was no real coordination of that effort. For example, if there was gastrointestinal illness, what agents would we look for?” The disease organisms most likely to circulate in crowded institutional settings—such as adenovirus, enterovirus or rotavirus—are not organisms that clinical laboratories typically test for, presenting a bit of a challenge.
facilities for newborn screening or environmental chemistry. The APHL Minute

Just two months after the storms, it is too soon to provide a definitive assessment of the laboratory relief effort in the Gulf Coast. Louisiana’s Stephen Martin—mentioned above, the only person on his field team with laboratory expertise—directed efforts to set up an ad hoc laboratory network. “It wasn’t enough to just say we’re going to have a laboratory network,” he said. “We physically needed to visit and/or call all of the laboratories involved that might be taking in patients from the [shelter] clinics.” The pathology department at the University of Texas Health Science Center agreed to accept specimens for some specialized testing, with certain tests funneled up to the Texas Bureau of Laboratories. Fortunately no outbreaks occurred.

So what is the take-home message? “We found out that there are assumptions being made about the availability and appropriateness of laboratory testing and that those assumptions are not always valid,” Martin explained. “To me this is an opportunity.” While he credits the Texas public health laboratory for its full support, he said that in general there is an “opportunity for state laboratories to be more involved in the coordinating and the establishment of the laboratory network” when special needs arise.

Astles noted separately that when hurricane Rita was bearing down on Texas just two weeks after Katrina, the Texas public health laboratory quickly sent out a communication to sentinel laboratories detailing how to prepare and whom to contact with questions or concerns. “By that time we were all much more proactive and preemptory,” said Astles. “We should be thinking that way every time there’s an imminent natural disaster.”

Just two months after the storms, it is too soon to provide a definitive assessment of the laboratory relief effort in the Gulf Coast. Louisiana’s Stephen Martin said he is “cautiously optimistic,” but that a critical juncture still lies ahead. If the Federal Emergency Management Agency fails to fund replacement laboratory space and equipment, the Louisiana laboratory system will be unable to perform newborn screening, environmental chemistry work and some molecular epidemiology testing for two to three years.

“‘There’s a lot of uncertainty there. If those things aren’t funded, we’ll have to drastically downsize. That will mean that the staff will have to be laid off. We’ll have to outsource testing and then there will be a big problem bringing some of that testing back into public health.”

Post-Katrina Reports from . . . Mississippi

Hurricane Katrina reached the southern US on August 29 and by August 30 federal disaster declarations were in effect in 44 Mississippi counties. The public health and medical infrastructure along the coastal region will likely be disrupted for years to come, with varying degrees of damage to every one of the area’s 14 hospitals—at least two of which were completely destroyed. Fortunately, the state public health laboratory—about 150 miles from the coast in Jackson, MS—suffered only minor water leaks. According to Degina Booker, deputy director of the facility’s clinical laboratory, staff’s priorities during the immediate crisis were supporting those clinical laboratories still in operation near the coast, providing bacterial water analysis, and conducting microbiological and PCR testing of clinical specimens. (The laboratory detected at least one norovirus outbreak in a shelter for evacuated residents.) The need for potable water testing, in particular, was so great that staff in Jackson worked in shifts seven days a week and mobile water testing units were requested from federal agencies and the state of Florida. Mississippi’s state laboratory director, K. Mills McNeill, activated the laboratory’s emergency response plan and traveled to the coast to assist in relief efforts. Said Booker, “Although a tragedy, the hurricane proved an opportunity to test our response plan. The plan was followed and worked extremely well.” She noted that coordination with the state department of health command center—which provided cargo vans and other vehicles—was essential to assure delivery of clinical specimens to functioning test sites while the state’s contract courier service was out of commission. Reflecting on lessons learned, Booker said she is “glad that we had the foresight to cross-train additional staff to perform bacterial water analysis,” but that even more staff will need to be trained “in the event testing is ever needed 24/7.”

Trying to tease out lessons at this point in the laboratory’s recovery, Stephen Martin said, “We’ve had hurricanes before and we thought we had things worked out. We weren’t really ready for this kind of domino effect. . . . You need to have a mindset that you need to expect the unexpected.”

Louisiana’s past consolidation of services, said Martin, “worked for what it was supposed to do, to make the lab more economical.” But it left the state with no back-up facilities for newborn screening or environmental chemistry.
The events of September 11, 2001, and subsequent anthrax and ricin attacks have made preparedness a priority for the nation. These attacks highlighted the vulnerabilities in our preparedness infrastructure, particularly the lack of a robust public health system. For decades, the public health system was neglected and not recognized as a critical partner in preparedness. However, in the past few years, public health has emerged at the forefront of preparedness, collaborating with new partners such as the Department of Homeland Security (DHS) and strengthening bridges with old partners such as the Department of Justice and other state and local law enforcement agencies.

Through various grants and cooperative agreements, the federal government has provided billions of dollars to protect the nation from a potential threat. However, congressional staff and many in the preparedness community have begun to question these appropriations and subsequent spending. Funding avenues, such as the CDC Cooperative Agreement on Public Health Preparedness and Response, often provide the only mechanism for states to purchase much needed equipment and supplies, offer training and connect to other local partners. Such funding is critical to maintaining and further developing an effective public health preparedness system. Despite current funding to state and some local health departments, challenges still persist.

**Competition for Dollars**

At the state level, there is often internal competition for the preparedness dollars. In the past, the CDC created “focal areas” and made recommendations for the appropriations within the states. Two of these focus areas, C and D, specifically addressed biological and chemical terrorism laboratory preparedness. The public health laboratories were successful in efforts to strengthen the laboratory infrastructure by increasing capacity and detection capabilities. All fifty states, the District of Columbia, and many local public health laboratories are members of the Laboratory Response Network (LRN) and serve as the nation’s system for identifying, testing and characterizing potential agents of biological and chemical terrorism.

**Federal Funding Cuts Jeopardize Recent Successes in Preparedness**

The majority of the preparedness funding for laboratories has been used to support the hiring and retention of personnel and the purchasing of equipment in these LRN laboratories. Within the last two fiscal years, federal funding for bioterrorism laboratory preparedness has declined. These funding cuts are critical as state funding deficits have been even more drastic. Further funding reductions threaten the ability of these public health laboratories to maintain the newly reestablished laboratory infrastructure and subsequent detection and confirmation capabilities.

**Measuring State and Local Preparedness**

As Congress and the preparedness community continue to call for accountability of these federal dollars, subject matter experts at the CDC and DHS are quickly developing performance measures to capture the level of preparedness at the state and local levels. At the core of these measures is Homeland Security Presidential Directive 8 (HSPD-8), which essentially tasks the DHS Office for State and Local Government Coordination and Planning (SLGCP)/Office for Domestic Preparedness (ODP) with developing a “national preparedness goal” and integrating currently disparate federal preparedness programs into a more coordinated system. As described in detail in the September-October 2005 issue of the Minute, DHS/SLGCP/ODP responded to HSPD-8 by establishing the National Preparedness Goal, which provides a means for the nation to address three fundamental questions: “How prepared do we need to be?”; “How prepared are we?”; and “How do we prioritize efforts to close the gap?”

The National Preparedness Goal includes the Universal Task List and the Homeland Security Target Capabilities List.

DHS developed the Target Capabilities List to identify and describe 36 capabilities needed to perform critical homeland security tasks identified in the Universal Task List. Currently, DHS is working with other federal agencies and partners to refine these performance measures and define resource requirements for...
each of the target capabilities. CDC and other public health partners were asked to provide input on the capabilities deemed relevant to public health, such as epidemiological investigation and laboratory testing, mass prophylaxis and post-exposure, environmental health and vector control, and isolation and quarantine. APHL members and staff have actively participated in this process.

APHL has also been engaged in discussions with CDC and other partners to assist with the revisions of the CDC performance measures for the 2006 CDC Cooperative Agreement Public Health Preparedness and Response. These measures should mesh with the target capabilities and tasks identified in the DHS Target Capabilities List, thereby preventing duplication of efforts. APHL members and staff will continue to work with DHS and CDC to contribute to the development of measurable objectives to track the spending of preparedness dollars.

Whether the target capabilities and performance measures translate into a more prepared nation has yet to be determined, but it is a step towards accountability of laboratory preparedness spending.

For more information on APHL’s preparedness activities, contact Chris Mangal at cmangal@aphl.org.

Policy

Senate Amendment Adds $3.9B for Pandemic Avian Influenza

On September 28, 2005, Senator Tom Harkin (D-IA) successfully added an amendment to the appropriations bill for the Department of Defense that provides $3.9 billion in increased funding for the CDC for pandemic avian influenza preparedness and response. The DOD appropriations bill was later passed by the full Senate, with the Harkin amendment intact, by a significant vote of 97 – 0. There is no similar proposal before the House of Representatives; it appears likely that the House will advance the soon-to-be-released pandemic avian influenza plan being developed by the administration.

Funding for the CDC under the Harkin amendment would be directed toward the purchase of antivirals and necessary medical supplies ($3 billion), state and local public health preparedness and hospital preparedness ($600 million), vaccine infrastructure development ($125 million), risk communication and outreach ($75 million), and global surveillance ($33 million). The increase in state and local preparedness funds would more than off-set the $130 million reduction in those funds proposed in the president’s budget.

There is strong bipartisan support in the Senate for the Harkin amendment, including support from the chairman of the Senate Foreign Relations Committee, Senator Richard Lugar (R-IN), who is a strong advocate for global health matters. While the White House official Statement of Administration Policy recommended several changes to the Senate DOD appropriations bill, it made no mention of the Harkin amendment and thereby bypassed an opportunity to place the administration in opposition to the amendment.

Although there are no details on the administration’s avian influenza plan, it appears likely to also include a component that will increase funding for state and local preparedness. It also appears likely that the administration’s plan will be adopted by the House and advanced into the House/Senate conference committee consideration of this issue as the House pandemic avian influenza proposal.

At this writing it remains unclear whether the $3.9 billion in increased funding for the CDC will continue to be considered as part of the DOD appropriations bill or whether it will be considered in another manner. According to senior staff to Harkin, this will be determined by whichever means will make the increased funding pass into law most quickly. All of this is very positive news because it appears quite likely that there will be a significant increase in federal funding in this area. APHL continues to meet with Congressional offices to press for the final adoption of the Harkin amendment with a significant increase in funding for public health preparedness.

The APHL Minute Ad Rates

As of January 1, 2006, APHL Minute ad rates will be as follows:

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To view a PDF of sizes and rates, go to https://www.aphl.org/conferences/minute_ad_rates_05.cfm.
Infectious Disease

CLIA Accepts APHL Proposal for Validation of Serum HIV Screening Assay for Use with Oral Fluid

In the July-August 2005 issue of the Minutest, APHL indicated that bioMérieux was experiencing problems with the supply of oral fluid Vironostika HIV-1 EIA kits. Shortly after the announcement, public health laboratories received oral fluid kits and the backorder was addressed. However in August, APHL learned that the oral fluid Vironostika kit was once again on backorder. bioMérieux representatives participated on the September APHL/CDC HIV Steering Committee conference call and discussed the supply of the oral fluid kit.

According to company representatives, an internal compliance problem was responsible for the latest in a string of backorders of the oral fluid kit. Most notably the wash buffer and diluents have been implicated as being at the source of the problem. bioMérieux assured APHL that the quality of the test had not been compromised and that the FDA was currently reviewing data demonstrating the product’s performance. The company hopes to have oral fluid Vironostika kits back on the market by the end of October 2005. The first lot that is released will not fill all backorders; however, all standing orders should be filled by the end of November 2005.

In order to deal with the extended national shortage of oral fluid kits, APHL, through the APHL/CDC HIV Steering Committee, has proactively examined alternative diagnostic testing options. Below is a short list of alternatives that are currently being implemented by public health districts.

- **Switch sites to rapid HIV testing utilizing the OraQuick ADVANCE.** (Be mindful of the quality assurance measures that would be required, including training, referral to counseling, and proficiency testing.)
- **Discontinue oral fluid testing and convert sites to serum-based testing with venipuncture.**
- **Validate a serum-based assay for use with oral fluid.** (One limitation to this option is the continued availability of the serum Vironostika HIV-1 kits for public health laboratories that utilize that assay).

The FDA issued a warning letter, dated July 29, 2005, to bioMérieux outlining numerous failures stemming from a FDA audit performed in March 2005. The letter is posted on the FDA Web site and can be viewed in its entirety at: www.fda.gov/ofi/oi/oi/5425 d.htm. bioMérieux has posted a public reply to this warning letter: www.biomerieux-usa.com/news/ announcement/letter_fda.htm. In addition, once bioMérieux releases its Vironostika HIV-1 plus O kit (planned for the second quarter 2006), the current serum Vironostika assay will be phased out after laboratories are given an opportunity to perform validations. An alternative would be to validate oral fluids using another serum assay such as the Bio-Rad HIV 1/2 Plus O, Bio-Rad HIV-1 rLAV, Abbott HIV AB HIV1/2, or a different serum screening assay.

In an effort to assist with option three, APHL submitted a proposal to the Centers for Medicare & Medicaid Services (CMS) for guidance on the minimum validation criteria public health laboratories would need to be able to use a serum-based HIV screening assay for testing with oral fluids. The proposal was accepted on October 5, 2005, and allows public health laboratories to perform a small parallel validation study consisting of at least 20 oral fluid samples including 5-10 confirmed oral fluid positive and 10-15 oral fluid negative specimens in order to piggy back off of the existing complied data. CMS has accepted this proposal under the premise of being an emergency short-term measure. Once bioMérieux oral fluid Vironostika kits become available again, laboratories that wish to continue using a serum-based assay for testing oral fluids will need to perform a more comprehensive and thorough validation study for long-term usage.

APHL realizes that many public health laboratories are almost, or completely, out of the bioMérieux Vironostika HIV-1 oral fluid kits. If your laboratory does not have oral fluid Vironostika kits available for a small validation or feel that you may not be able to obtain five positive oral fluid positive specimens, contact a neighboring public health laboratory that may be able to lend a kit and/or some positive oral fluid specimens. If your laboratory is still unable to obtain positive oral fluid specimens or the necessary kits needed for validation, either on your own or from a neighboring laboratory, contact APHL’s Anthony Tran, and the association will do its best to obtain specimens for your laboratory.

The APHL proposal accepted by CMS can be found on the members-only portion of APHL’s Web-site, accessed by logging onto www.aphl.org. For questions regarding the proposal or general inquiries, contact Anthony Tran, APHL’s HIV, STD, TB program manager, at atran@aphl.org or 202.822.5227x229.

APHL
PulseNet Update: Outbreak Detection, Software Upgrades, Meetings

PulseNet Helps Detect Recent Outbreaks

Routine surveillance by PulseNet laboratories across the country has been very successful in finding previously undetected outbreaks of foodborne illness. Many of these outbreaks are associated with a local restaurant or catered event, and the public health response can include education of foodservice staff on how to safely serve the public. The state public health laboratory in Ohio posted such a cluster of Salmonella Javiana to the PulseNet WebBoard in August 2005 and the State of Hawaii Department of Health investigated an outbreak of Shigella sonnei associated with a spiritual retreat in August 2005. Some outbreaks involve chain restaurants along highways or large events that affect patrons from across the country. PulseNet can be instrumental in identifying the affected persons and linking them to the outbreak once they return home. As an example, Oregon posted a cluster of Shigella sonnei associated with a spiritual retreat in August 2005.

Well-publicized foodborne outbreaks typically involve products that are distributed regionally or nationally and the federal regulatory response to these outbreaks can improve the safety of our food supply from farm to fork. A sampling of recent multi-state clusters that led to product recalls include E. coli O157:H7 in pre-packaged lettuce first detected in Minnesota, S. Typhimurium variant Weltevreden related to a shrimp poke in New York State, S. Typhimurium variant Copenhagen in cake batter ice cream first detected in Minnesota, and S. Enteritidis in raw almonds first detected in Oregon.

PulseNet laboratories also detect outbreaks of illness that may be associated with daycare centers, petting zoos or recreational water. Recent examples of such person-to-person outbreaks include S. sonnei in a daycare center in Kentucky and an outbreak at a swimming lake in northern Pennsylvania that also involved S. sonnei.

By continuing laboratory surveillance of PulseNet isolates and enhancing collaborations with epidemiologists and other food safety professionals, PulseNet laboratories can help reach the Healthy People 2010 objectives for decreasing the incidence of foodborne illness in the US.

Security Enhancements Require Upgrade to PulseNet Software

Enhanced security requirements throughout CDC have caused a need for additional encryption measures in the BioNumerics software used by the PulseNet network. Applied Maths will write these additional security measures into the soon-to-be released BioNumerics version 4.5. Those participating laboratories that have already purchased BioNumerics v4.0 will be able to request the upgrade to v4.5 at no charge, including the enhanced security measures. Additionally, those laboratories that purchased BioNumerics v3.0 or higher should be entitled to one free major upgrade to v4.0 now, followed by a request to upgrade to v4.5 at no charge when that version becomes available later this year. By January, any participating laboratory that has not installed BioNumerics v4.5 will not be allowed to perform cluster searches by downloading patterns from the National Database. Participating laboratories may contact the Applied Maths office in Austin, TX, at 512.482.9700, for more information regarding BioNumerics purchases and upgrades.

Meetings That Matter

CDC continues to partially support the highly successful regional meetings that encourage PulseNet laboratorians and foodborne epidemiologists to develop action plans for improved foodborne disease surveillance and response at the state and local level. Meetings are tentatively scheduled in the mid-Atlantic and Midwest areas in the first half of 2006. Meetings in the West and South Central areas will also be planned prior to June 2006. The states in the North Central area are making arrangements for their second regional meeting in February 2006. APHL appreciates the additional support of the host public health laboratories in making each of these meetings possible.

Planning is well under way for the 10th Annual PulseNet Update Meeting, to be held at the Radisson Hotel in Miami, FL, from April 4-6, 2006. A welcome reception will be held on the evening of Monday, April 3. This will be the second time that we are joined by the National Foodborne Epidemiologists Meeting. We look forward to many combined plenary and break-out sessions, in addition to the sessions focused on the latest PulseNet laboratory and software information. Additional information will be posted at www.aphl.org/conferences/.

For questions about the PulseNet program, contact Shari Rolando, srolando@aphl.org, 202.822.5227, ext 205.
Influenza Update

In preparation for the upcoming influenza season, the APHL Infectious Diseases Committee convened a 50-state conference call in September with CDC representatives to discuss isolate submission, pandemic influenza assays and update influenza protocols.

Dr. Alexander Klimov, chief of the Influenza Branch Strain Surveillance section, stressed how important it is for state public health laboratories to submit original clinical material to CDC for further characterization during the early, middle, and late stages of the influenza season: this material contributes to the selection of future vaccine strains. Late season isolates are especially useful as they are good predictors of next season’s vaccine strain.

Richard Kellogg, the CDC’s Laboratory Response Network (LRN) coordinator, announced that the LRN has developed a pandemic influenza assay. This real-time PCR assay is undergoing validation and will soon be available on the secure LRN Web site. Guidelines for use of this protocol will also be included online.

Dr. Steve Lindstrom, from the CDC’s Influenza Branch Strain Surveillance section, reviewed the real-time, reverse transcriptase PCR (rRT-PCR) protocol for influenza detection and subtyping that is currently available on the APHL members-only Web site. Lindstrom recommended updates to improve the sensitivity of the assay. Although these are not critical or mandatory changes, it is recommended that laboratories implement them at their earliest convenience. Lindstrom also announced that CDC will supply influenza A/H5 controls for public health laboratories this season. Since the control material is human-derived and incapable of infecting animals, CDC will not seek a USDA/VS permit for it.

APHL will post the updated CDC rRT-PCR influenza protocol along with instructions on obtaining H5 controls on the members-only Web site, www.aphl.org/member_center/. Additional information on influenza preparedness will be included on APHL’s main Web site. For questions regarding influenza, contact Patricia Blevins, emerging infectious disease program manager, at 202.822.5227 x 214.

Effective Focus Groups Augment Relationships with Clinical Laboratories

In early 2005, the CDC’s Division of Public Health Partnerships conducted five focus groups in Florida, New Mexico, Michigan, Washington, and Pennsylvania, to examine the guideline adherence and implementation of laboratory practices outlined in the CDC’s 2002 Morbidity and Mortality Weekly Report, “Prevention of Perinatal Group B Streptococcal Disease: Revised Guidelines from CDC.” A preliminary review of the focus group data highlighted failures and successes in the adherence to group B streptococcal disease guidelines, and provided insight into how to improve the presentation and distribution of laboratory guidelines to encourage consistency among laboratories.

The focus group project was a collaborative effort among APHL, CDC and the five state public health laboratories. Each public health laboratory assumed an important leadership role by hosting the focus group and recruiting local microbiology supervisors from clinical laboratories to participate in the discussions. Locating the meetings at the five state laboratory facilities was ideal since participants were within driving distance. Further, the participants’ familiarity with the state laboratory representatives prompted enthusiastic involvement in the project. Focus group attendees were then able to tour the laboratory facilities and discuss best laboratory practices and other issues among fellow attendees.

This methodology proved successful and could serve as a model for future focus groups or laboratory networks within a state. The clinical laboratories’ willing involvement in the project demonstrated that the state public health laboratories could serve as local champions, encouraging guideline adherence and participation within their state. State public health laboratories could also serve as successful mediators between the CDC and private clinical laboratories and distribute important information, updates, and guidelines from the CDC. This would be one more way that state laboratories can augment their relationships with clinical laboratories, in keeping with the National Laboratory System model.
Collaborating with an ongoing training project, APHL helped execute a new workshop, “Laboratory Capacity for Supporting HIV/AIDS Care and Treatment,” in Odessa, Ukraine, in mid-September. The American International Health Alliance (AIHA) and the Regional Knowledge Hub for the Care and Treatment of HIV/AIDS in Eurasia asked APHL to collaborate on the project; the two organizations have been training Ukrainian clinical care professionals, and needed a partner with laboratory expertise to provide a broad overview of the range of laboratory testing methods that are important in the diagnosis and treatment of HIV/AIDS. The curriculum was developed to provide a common foundation for laboratory personnel currently performing or supervising HIV/AIDS related testing, laboratory quality assurance personnel, and clinicians involved in the care and treatment of HIV/AIDS patients. An important secondary objective of the workshop was to provide an opportunity for the participants and the HIV/AIDS Centers in Ukraine to identify and recommend subject matter for future, more intensive workshops, including practical hands-on laboratory instructional sessions.

The material presented during this week-long training was drawn from consensus documents developed by the World Health Organization, National Institutes of Health, Clinical and Laboratory Standards Institute, CDC, published scientific literature, and specific training materials developed by APHL or the Association of Clinical Pathologists. A combination of didactic lectures, practical exercises, case studies and discussions helped participants acquire an understanding of the essentials of good laboratory practices. Simultaneous translators in Russian and in English were used throughout the workshop to ease communication between the faculty and participants.

Some of the main topics covered during the training included laboratory quality assurance and quality control, specific testing methods for flow cytometry to measure CD4 concentration, hematology and chemistry testing related to HIV/AIDS, HIV viral load testing, interpretation of the Western Blot assay for HIV antibody, as well as selection and handling of specimens for analysis.

Lucy Maryogo-Robinson, APHL global health program manager, attended the workshop, coordinating aspects of the program evaluation. Participant evaluations of the workshop indicated high satisfaction with the program content, knowledge gained and the opportunity to network with the faculty professionals. This project provided a unique opportunity for APHL to work with professionals in Ukraine and to form a new relationship with AIHA. APHL will continue to refine the course materials, making improvements based on the participants’ evaluations and post-test, as well as from observations and discussions at the workshop. For more information, contact globalhealth@aphl.org.

Faculty was a multidisciplinary team of international instructors:

Dr. Harvey George
Director, Diagnostic Laboratories, Massachusetts State Laboratory Institute

Dr. Geneve Allison
Physician, Division of Geographic Medicine and Infectious Disease, Tufts-New England Medical Center, Boston, Massachusetts

Dr. Eugenia Buravtsova
Head of Department, Russian Federal AIDS Center, Moscow

Dr. Vladimir Orekhov
Trainer, Abbott Laboratories, Moscow

Dr. Olga Kravchenko
Chief Laboratory Specialist, National AIDS Center, Kiev
Richmond: Detecting Norovirus by Real Time PCR

“Detecting Norovirus by Real Time PCR,” a NLTN workshop held at the California Department of Health Services in Richmond, CA, in August, had a two-day format to showcase a lecture and an intensive, wet laboratory course. Sixty-eight people attended the lecture, which focused on the epidemiology and public health relevance of Norovirus, along with a comparison of real-time platforms and performance specifications of molecular assays. The hands-on, lab portion of the workshop had 32 participants from 15 states.

Participants who attended both days of the workshop reported that the laboratory day was the key to “demystifying the PCR process,” and the best way to learn the techniques. Many also appreciated the access to vendors and found the comparison between different real-time PCR platforms helpful. According to the evaluation, due to the influence of the course curriculum, 81% of lecture and lab participants plan to network more with other labs who perform molecular assays, 69% will begin or improve validation and verification processes, 60% will implement enhanced QA/QC methods and 47% will begin Norovirus testing.

Special thanks are extended to the lab instructors: Angie Trujillo, Karen McCaustland, and Steve Morse from the CDC’s National Center for Infectious Disease. Additionally, appreciation is extended for all the lab support from the California Department of Health Services Viral and Rickettsial Disease Laboratory.

NLTN Staff Meeting – Reflections & Outlook

The staff of the National Laboratory Training Network (NLTN) convened their annual, three-day, fall meeting in Atlanta in September. In addition to the NLTN field staff, several CDC Office of Workforce and Career Development staff members were present, as well as APHL’s Carol Clark, chief operating officer, and Wilma Brooks, development director. The agenda included discussions of budgetary issues, association management software training for staff, current and future distance learning projects, marketing and knowledge management endeavors, and educational outcomes indicators.

A Look Back
Notable highlights from each NLTN field office were shared to celebrate the accomplishments of the NLTN. Following are a few:

Boston Office
The Boston office facilitated the Public Health Teleconference Series, along with five other teleconferences last fiscal year, with an audience of over 14,000 laboratories. In addition, the staff in Boston worked collaboratively with 12 public health laboratories, as well as branches of the Clinical Laboratory Management Association, American Society for Microbiology, and the Northeast Association for Clinical Microbiology and Infectious Diseases, to present courses ranging from hands-on parasitology to biomonitoring.

Chicago Office
Notable among the many accomplishments of the Chicago office was the presentation of a four-part teleconference series in collaboration with six public health laboratories, attracting almost 2,500 participants. Additionally, the staff in Chicago successfully facilitated the fourth Virology Public Health Series Course, which has now trained 78 participants from 46 states in hands-on public health virology techniques. The workshops-in-a-box and self study courses administered by this office remain successful, with the workshops-in-a-box alone training over 300 laboratories nationwide since January 2005.

Richmond Office
The Richmond, CA, office boasts that 92% of their courses in the previous year were marketed to a national audience and/or were a NLTN “hot topic,” like parasitology, newborn screening, molecular technology and emergency preparedness. Partnering was also a hallmark of staff efforts: co-sponsored training activities took place with 13 state and local public health laboratories and eight regional groups of the American Society for Clinical Laboratory Science. They also received educational grant support from 21 different laboratory supply companies.

Nashville Office
Most of the training activities facilitated by the Nashville office in the last fiscal year focused on critical, hands-on bioterrorism preparedness and packaging and shipping infectious agents for Laboratory Response Network (LRN) sentinel laboratories, in collaboration with state public health laboratories. These courses trained over 750 laboratory professionals in 42 courses in seven states. A national teleconference on bioterrorism preparedness was attended by 400 laboratories. Also, the now familiar, computer-assisted, molecular technology instructional program, starring Danny DNA, is in the process of being converted to an online modular format.

Continued on page 16
Library & Marketing

In the last fiscal year, the NLTN library has served 2,469 laboratory professionals in 52 states and territories, and the 816 items that have been checked out represent a 10% increase in usage from the previous year. In the marketing arena, the NLTN has exhibited at three national laboratory professional society meetings, specifically the American Society for Microbiology, the Clinical Laboratory Management Association and the Society of Armed Forces Medical Laboratory Scientists, and several regional professional meetings nationwide. Moreover, the NLTN’s electronic newsletter now reaches over 4,000 laboratory professionals.

The CDC Connection

In addition to the planning activities, NLTN staff heard several presentations from CDC staff. Dr. Harvey Holmes, from the Bioterrorism Preparedness and Response Program, gave an update on LRN reference protocol training, BSL-3 courses, and his perspective as a member of the Integrated Consortium of Laboratory Networks’ Training Technical Committee. Edith Dean from CDC’s Corporate University gave an update on the Health and Human Services’ Learning Management System. Melissa Locket, Office of Workforce and Career Development, identified current online services available for the group’s use, including registration and evaluation systems, and detailed how to use them effectively for distance learning management. Dr. Andrea Young, Coordinating Office for Terrorism Preparedness and Response, discussed the role of the Centers for Public Health Preparedness in the training of emergency responders nationwide. Finally, the NLTN staff was treated to a presentation by Elliott Churchill from the CDC’s Office of Global Health, who was instrumental in the development of the Morbidity and Mortality Weekly Report (MMWR); she issued a challenge to the group to publish their many accomplishments, as well as to provide practical tips for selecting publications and other helpful resources.

For more information on the NL, call 800.536.NLTN (6586) or email nltn-marketingmgr@nltn.org.

Fellowships

EID Fellows Update

APHL’s EID laboratory fellows continue to work in public health laboratories following their initial assignments. Following her two-year, post-doctoral fellowship at the CDC, Karen Williams received a United Negro College Fund/Merck Science Initiative Fellowship to continue her research for 18 months. About her experience, Williams remarked, “The program went above my objectives and expectations. I had more opportunities than expected to gain experience and knowledge of CDC public health goals and operations.” Training fellow Mylene Mozafarzadeh completed her fellowship at the California Department of Health Services in September, only to be retained as a full-time laboratory employee. She is pursuing certification as a public health microbiologist. International fellow Janice Campos Cañili was named regional coordinator for Asia for the “Preserving the Effectiveness of TB Treatment with Second-Line Drugs” (PETTS) study. A collaborative project of the CDC, Green Light Committee (GLC) and WHO, the study evaluates the effectiveness of the GLC in addressing multi-drug-resistant tuberculosis. The study sites in Asia include Thailand, South Korea, India, and Cañili’s native Philippines.

Publications and Presentations

Christina Conrardy presented the poster “Molecular Surveillance of *Bordetella pertussis* in Washington State from 2000-2004” at the International Union of Microbiological Societies conference in San Francisco in July. Conrardy recently completed her fellowship at the Washington state public health laboratory.

Post-doctoral fellow David Sue presented a poster at the Bacillus Anthracis, Cereus, Thuringiensis Fellowships

Environmental Health Traineeship Program

APHL and NCEH/CDC are pleased to provide an opportunity for state public health laboratories to enhance environmental health laboratory capabilities through the Environmental Health Traineeship Program. The program provides travel for current laboratory staff to attend relevant conferences or trainings, or short-term (1-6 week) specialized training in environmental health technology and testing methods at another state health department, NCEH/CDC, or other state or federal agencies (such as ATSDR, EPA, NIEHS or NIOSH). For more information or application materials, contact Lauren DiSano, environmental health program manager, at ldisano@aphl.org.
He experience of providing training under these challenging conditions was incredibly rewarding, in part because these folks were so immensely appreciative of getting applied instruction on techniques that they had previously only been able to read about in books.

--Juliet Bryant, EID Fellow

Lisa Calhoun's fellowship projects include a field-based project to determine the productivity of Combined Sewage Overflows (CSO) for Culex quinquefasciatus, the major vector species of West Nile virus (WNV) in the eastern US. The 11 CSOs within metro Atlanta are a major breeding area. This is the first systematic study designed to produce an evidence base for the control of mosquito breeding in CSOs. Calhoun states, “Understanding which habitats produce the greatest number of mosquitoes will suggest means for controlling the vector population and therefore WNV. This study has the potential to have a huge public health impact due to the presence of 700 CSO’s in hundreds of major cities around the United States. This project is a valuable experience as I am learning the vital steps to design a field study and the application of many field techniques.”
Member News

Seattle & King County Laboratory: Keeping an Eye on Emerging Threats

Director

When Paul Swenson was offered the directorship of the Public Health-Seattle & King County Laboratory in 1986, it was an opportunity to do the work he loves and a chance to return to his native Seattle after years of study and work on the East Coast. Unlike many public health laboratory directors who come to their positions after a circuitous career path, Swenson said, “Early on in my PhD program I pretty much decided that’s what I wanted to do.” After earning his doctorate in clinical microbiology at the Medical College of Virginia, he stayed on for a postdoctoral residency program in medical and public health laboratory microbiology. Swenson then directed the clinical virology laboratory at North Shore University Hospital in Manhasset, Long Island, before coming home to Seattle.

Location

“When I came here in 1986,” Swenson said, “our public health lab was located in the Public Safety Building in downtown Seattle, which also housed the police department. It was a very old building and the laboratory facility was very old. I remember when I was here interviewing for the job—it was such an old facility it almost made me think twice.” Thanks to funding from a county bond issue, in 1997 the laboratory traded its antiquated space for a brand new building. Now, he said, “we’re in a county hospital with other health care workers instead of the police.” The local medical examiner, public STD clinic and TB clinic are located in the same building, which overlooks the downtown city area.

Facility

The bulk of the 5,000-square-foot laboratory is BSL-2, with a 200-square-foot BSL-3 suite used for TB and bioterrorism (BT) testing. Swenson said the new facility has only one drawback: “instead of being on the 13th floor with a beautiful view of Elliott Bay, now we’re in the basement with no windows.”

# Staff

16, comprising 14.5 full-time employees. Swenson said his staff size was stable from the time of his arrival until 1999, when a state initiative was passed eliminating the state motor vehicle excise tax. “That cut some state revenue that came to public health.” Despite having reinstated some positions that were lost at the time, Swenson said, “We’re a smaller laboratory today—by about 3 FTEs—than we were in 1999.”

Revenue

About $1 million of the laboratory’s $1.6 million budget comes from local and state taxes, $200,000 from federal and other grants and the remainder from customer fees.

Distinguishing Characteristics

► The larger of only two local public health laboratories in Washington, it performs nearly 140,000 tests per year. Swenson’s shop serves the 1.8 million residents of Seattle and the surrounding area. Most of the laboratory’s work supports the activities of Public Health-Seattle & King County.

► A reference laboratory for clinical microbiology laboratories in King County

► Recently began a BT program “strictly to maintain capacity.” The laboratory assures appropriate staff training and select agent registration, but does no routine BT work.

Highest Volume Testing

Syphilis and HIV serology, followed by hepatitis serology and testing for chlamydia and gonorrhea. Lower volume work includes tests for TB, herpes serology, respiratory and enteric bacteriology, total coliforms and E. coli in drinking water, stool parasites and viruses (e.g., influenza). Swenson noted that Washington is one of the only US states—and perhaps the only one—that has not had a single human case of West Nile virus.

Notable Success Stories

► Computerizing the laboratory in 1995. The laboratory uses M/LAB software from M/MGMT Systems in Sacramento. The technological upgrade was a “huge improvement over a completely manual system with individual little lab forms for each test that we did.”

► Relocating into the new laboratory facility in 1997.

► Expanding nucleic acid testing for gonorrhea and chlamydia.

► “Making good progress” in automating some laboratory testing (e.g., hepatitis testing).
Biggest Challenges

“Our biggest challenges usually have to do with county funding—our biggest source of revenue. County revenue is not keeping up with the cost of county services. We feel that; some years worse than others.”

- BT work. “Instead of just being prepared to do this testing, we may have to actually do some of the testing to take the load off of the state (public health laboratory).”
- Serving a growing—and increasingly diverse—county population. “There are actually a large number of immigrants entering the US through the state of Washington,” sometimes with a higher prevalence of infectious disease. With this increasing clientele, the laboratory’s workload is increasing about 5% per year—“another reason we’re looking toward more automation.”
- Preparing for emerging threats, such as avian influenza.

# Vacancies

0. “We virtually never have any vacancies. If we have a vacancy, we have to hire someone like yesterday just to keep up with the work. Fortunately . . . we have been very successful bringing in well-educated, trained folks to do our lab testing” (perhaps due to the proximity of the University of Washington and the state public health laboratory, both of which train laboratory scientists).

Goals

“Our principal goal is to continue to provide high-quality, cost-effective lab services to our health department and to develop the capacity to provide whatever lab services our department might need to handle emerging health threats. For example, right now, one of the questions I keep getting asked is ‘Can you do any avian flu testing?’ Right now we do not have the containment facilities to do that. One goal may be to look at molecular methods for doing flu testing that we could do in our BSL-2 work area.”

O ur biggest challenges usually have to do with county funding—our biggest source of revenue. County revenue is not keeping up with the cost of county services.

--Dr. Paul Swenson

Update from Board of Directors Meeting

The APHL Board of Directors met in September in Boston, MA. Key results from the meeting are as follows:

- A revised edition of the Board Policy Handbook was approved
- A finance committee was created to review proposals, APHL quarterly financial statements and investments, collaborate on the development of new business strategies, and approve all investment purchases and sales. If necessary, individuals who are not members of APHL may serve on this committee provided that: 1) they have financial management skills that the general membership does not and 2) the non-members constitute a minority of committee members. The chair of the finance committee will be the secretary-treasurer.
- The new Nominations Committee will be formed this fall to address the vacancy in two board director positions created by the membership restructure. The elections will take place before the end of the year.
- The board reviewed all committee plans and prioritized the work according to the current and new strategic plan.
- The board met with representatives from APHA to discuss the National Citizens Movement to Protect Our Health. The group discussed a joint effort of several other public health agencies to evaluate and design a research agenda, and to help the CDC develop its agenda.
- The board endorsed the LIMS collaborative development effort with consideration for the differences in information technology restrictions and regulations between states and for the coordination of the project within the existing APHL development activities.
- The Council of Chairs met with the consultants from Quatt Associates for two days to revise and flesh out the association’s 2006-2009 Strategic Plan. Details of the plan will follow in an upcoming issue of the Minute.

For more information, contact Shawna Webster, 202.822.5227 ext. 225, swebster@aphl.org.

Member Notes

Michael Loeffelholz, PhD, has resigned from his position as laboratory director at the Arkansas Department of Health and Human Services. Under his leadership, the Arkansas laboratory has seen many successes, such as implementing an innovative, new method to ensure accurate and reliable test results; increasing external training, outreach activities and emphasis on customer service; and building a state-of-the-art, BSL-3 laboratory, a new virology lab and a chemical terrorism response laboratory. Loeffelholz has been an active member of APHL, serving on the Board of Directors and numerous committees. APHL extends its deep appreciation for his service, and wishes him well as he tackles his new position on the senior management team of Viromed Laboratories in Minnesota.

At the upcoming American Public Health Association annual meeting, Matthew Matusiak, Marion County, Indiana’s public health laboratory director, will be presenter at one of the scientific sessions. Matusiak will detail one of their laboratory projects that

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On September 11, 2001, Maurice Knuckles, director of the District of Columbia Public Health Laboratory (DCPHL), was at work in the top floor of the municipal building that houses the laboratory at Judiciary Square. At that time, before new construction blocked the view, he said, “we had a clear view of the Capitol building. We actually saw them evacuating the Capitol building from our window. We looked out another window and we could see the smoke from the Pentagon.”

Situated just three blocks from the US Capitol and about 12 blocks from the White House, Knuckles calls location a blessing and a curse. “The lab is centrally located and easily accessible, but whenever there is a big rally or major event like the inauguration, our building is usually within the security perimeter,” he said, “and we sometimes need special permission just to get to work.”

Knuckles recalled one incident during presidential inaugural festivities when he was stopped by Secret Service agents on his way to the laboratory. He said, “We were working with the Food and Drug Administration to collect food samples from the [inaugural] balls and we had a skeletal crew working that night and I was part of it.” How did he gain entry? “I said, ‘If you want to be responsible for testing the president’s food, perhaps I can go home.’” The agents let him pass.

“We have these little hiccups from time to time,” he said.

The DCPHL is in fact the only public health laboratory in the nation’s capital. In addition to serving the residents of the District in both a state and local capacity, the laboratory conducts surveillance and testing on behalf of visitors and those who commute into the city for work, and maintains regular contact with assorted national laboratories such as those at Walter Reed Army Medical Center and the Pentagon laboratories. “We’re it, so we do many things,” he said. “If you like a challenge and you don’t like being bored, this is the place for you.”

Most recently the laboratory has been helping to investigate a case of suspected Francisella tularensis or Brucella—both potentially lethal organisms that are considered possible bioterrorism agents. Because the patient was a Maryland resident being treated at a DC hospital, the DCPHL worked closely with the Maryland Laboratory Administration to transport specimens for testing. “That happens a lot,” said Knuckles. “When we have an incident or outbreak, we don’t ask where anyone comes from; we coordinate the laboratory response, be it testing or referral.”

Fluid jurisdictional lines, though, are a problem for the laboratory as its local funding is pegged to the permanent DC population of about 600,000; not the 1.2 million people inhabiting the city on any given day. Moreover, Knuckles said city officials need to overcome “the perception that somehow the federal government is going to [grow the laboratory] for us. The idea that public health laboratory capability and capacity can be sustained without adequate local resources must be vanquished.” Still, the laboratory’s roughly $3.4 million annual budget is mostly of federal origin, supplemented by DC tax revenue and fee-for-service testing. (For example, the laboratory did a lot of testing for the Brentwood postal facility that was contaminated with anthrax in 2001 and still receives about five environmental clearance samples from the facility each week.)

Knuckles, who earned a PhD at the University of Alabama at Birmingham, came to the laboratory five years ago on a 60-day detail from his erstwhile position as deputy director for the DC Department of Environmental Health. The 64-year-old laboratory—housed in the same building, above the city police department, since it was founded in 1941—was in such disrepair that the DC health director had had it shut down. After some renovations, Knuckles was assigned to “stabilize” the laboratory and to recruit a new director.

As luck would have it, Knuckles said, “I was here five days and CLIA [inspectors] walked in.” Knuckles and the laboratory staff spent an entire summer working to come into compliance with Clinical Laboratory Improvement Amendment (CLIA) regulations, a task enormously complicated by the fact that the recent laboratory face-lifting had been overseen by non-laboratorians. “The laboratory had been renovated as if it were office space,” said Knuckles. “They removed old cabinets and sinks, put in new...
drywall and ceiling tiles and dutifully installed one quad electrical outlet in each room.” Fortunately, before moving to the District, Knuckles had operated a research toxicology laboratory for nine years at Meharry Medical College in Nashville and knew what needed to be done.

But the second part of Knuckles’ assignment—finding a new laboratory director—proved more difficult than the first. There were no takers. “Given the shape the laboratory was in then it was very difficult to recruit someone here,” he said. “After a year or so of hard work and establishing good working relationships with the staff and our clients as interim director, I thought perhaps I’d stick around.” Thus Knuckles became director in August 2001, less than one month before terrorists crashed a plane into the Pentagon about a mile away.

“Am I not timely?” he asked.

Despite the serious distractions of 2001 (and the many incidents since then), Knuckles and his staff have been dedicated to getting the laboratory “back to where it should be: a stable facility with good quality services.” In a relatively short time, they have established the District’s first molecular biology and virology laboratories; enhanced an existing chemistry laboratory; upgraded technology for microbiology, medical diagnostics and immunology; and established a remote specimen collection/triage center. The laboratory is in the process of implementing a laboratory information management system.

Today the 15,000-square-foot laboratory does a bit of everything. It provides analytical support for the city health department’s core programs (e.g., emergency preparedness, STDs, HIV/AIDS, blood lead, West Nile virus, influenza, etc.), performs clinical diagnostic testing for the city’s free and non-profit clinics, does clinical reference testing for area hospitals and runs environmental and food safety testing programs. The DCPHL’s small but talented and dedicated staff processed more than 146,000 tests in 2004. Knuckles said, “Even things we don’t do routinely, we make sure that we are the broker for laboratory services; that things get done.”

One innovative program is run in collaboration with the city’s food protection services. “We have a lot of hot bars and salad bars in DC and a high volume of federal and District workers who partake of them,” explained Knuckles. Food protection workers collect food samples from these bars randomly on a weekly basis and deliver them to the DCPHL for testing. No bioterrorism agents have been found in the food, but “typical things” like Staphylococcus have turned up from time to time. “We certainly report those things back to food protection so that they can increase their inspections and better educate the food handlers in those facilities,” said Knuckles.

O ur goal is to be a full-service lab. Right now we’re not a full-service lab in that we don’t have the space or the people or the funding. Basically we’ve got to have the analytical services that the people of the District need and deserve.

--Dr. Maurice Knuckles

Last year when lead was discovered in District drinking water, the laboratory tested 8,000 blood samples in 90 days. “We were running around the clock.” Fortunately, the few cases of elevated blood lead were traced to other environmental conditions, such as peeling lead paint, thus quelling some of the panic in the city.

When high school students decided to play with the mercury they discovered in a science classroom in a DC public school some months ago, the laboratory was instrumental in arranging testing so the school—which had been evacuated—could be re-opened and potential health effects assessed.

What are Knuckles’ plans for the future?

“Our biggest problems,” he said “are space and personnel recruitment. If I could solve those two things, I would not complain about anything.” The laboratory currently has 32 positions and 9 vacancies. Even though the area is home to a highly skilled workforce, the DCPHL must compete for workers with a score of federal and private employers—such as the National Institutes of Health—that are able to offer more attractive salaries and benefit packages. The laboratory is now looking to recruit chemists, medical technologists and a virologist. (District residence is not an employment requirement.)

On the facilities side, Knuckles said, “15,000 square feet is not nearly enough.” In the short-term, the DCPHL and department of health are working to establish a pre-fabricated, 5,000-square-foot public health annex that would allow the laboratory to institute a biological safety Level-3 (BSL-3) suite and supply more space for molec-
looked at blood lead levels in NASCAR racing teams. NASCAR is the only major autosport to use fuel containing lead. The session, “Blood Lead Levels in NASCAR Racing Teams,” is scheduled for Monday, December 12, at 8:30 am in Philadelphia, PA. More information can be found at www.apha.org.

The Institute for Quality in Laboratory Medicine (IQLM) named Paul Kimsey, California’s public health laboratory director and APHL’s past president, as a member of its Networks Workgroup. The IQLM Networks Workgroup is charged with advising the Institute on what networks need development, creating diverse linkages between laboratories and assisting in implementation of new networks.

Alabama state lab director, William Callan, PhD, was an award recipient at CDC’s 53rd Honor Award Ceremony on October 26, 2005. CDC Director Julie Gerberding, presented Callan with the Partners in Public Health Improvement Honor Award. For more than 13 years the Alabama Bureau of Clinical Laboratories has provided the CDC’s Newborn Screening Quality Assurance Program with evaluation materials used to monitor the performance of sickle cell disease screening methods for public health programs around the country and worldwide. Callan was nominated for this distinction in recognition of his exceptional dedication to this important partnership.

Janie Wallace, Immunology Division Director of the Mississippi Public Health Laboratory, spoke at The University of Southern Mississippi Medical Technology Certificate Ceremony in June, 2005. Her speech to the graduates was entitled “At the Heart of Medical Technology” and was recently printed in the September edition of the American Society for Clinical Laboratory Science’s monthly newsletter, ASCLS Today.

To share member news, send a brief notice to Anna Dillingham, adillingham@aphl.org. Member notes will be included in upcoming Minute issues as space is available.

Dues Increase for Local, Associate Institutional Members

Dues for Local Public Health and Associate Institutional Laboratory members will transition on July 1, 2006, from the one-year, introductory rate of $500 to the following, population-based rates. The board of directors approved these new rates in January 2005. Please use the schedules below to develop your budget for the next fiscal year. For more information, contact Anna Dillingham, membership manager, adillingham@aphl.org.

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Additional delegate members may be added by the member-representative for $100 a piece.

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New APHL Institutional Members

On July 1, APHL extended institutional membership to local public health, environmental and agricultural laboratories. Many long-time APHL members are now enjoying the benefits of institutional membership. APHL welcomes the following laboratories as its newest institutional members.

Public Health Institutional—Local Members

Houston Department of Public Health, Laboratory Services, Eddie Marbley, MS, JD
New York City Department of Health and Mental Hygiene, Public Health Laboratory, Sara T. Beatrice, PhD
Norfolk Public Health Laboratory, Commonwealth of Virginia, Dongxiang Xia, MD, DrPH

Orange County Public Health Laboratory, State of California, Douglas Moore, PhD

Associate Institutional Members

Massachusetts Department of Environmental Protection Laboratory, Oscar Pancorbo, PhD

Minnesota Department of Agriculture, Laboratory Services Division, William R. Krueger

Vermont Department of Environmental Conservation Laboratory, Gerald J. DiVincenzo, PhD
In July 2004, an APHL taskforce led by members of the Laboratory Systems and Standards Committee (known then as the Leadership Committee) met to discuss the future of quality laboratory practice in public health and how best APHL could take control of defining model practices and standards for public health laboratory practice—before someone else did it for us. Out of this discussion came the realization that we needed to create and implement voluntary performance standards for public health laboratories.

Even before this initial meeting, the broader public health community has moved forward to develop performance standards for various levels of the public health system. The CDC, in partnership with a number of national associations, developed standards for and tools to measure performance of state and local public health systems, and local public health governing boards. Each of the tools uses the Ten Essential Public Health Services as a framework, and is focused at the system level. The state public health system performance standards include very little about laboratory system responsibilities. To this end, at its recent fall meeting, the APHL Board of Directors recommended the development of performance standards which would assist state laboratory directors and leaders in addressing and measuring the overarching essential public health laboratory services, and to support the development of an accreditation process for state public health laboratories. In addition, performance standards can help public health laboratories monitor, evaluate and report on laboratory performance, identify programs within their organizations that would benefit from a total quality improvement process, prompt discussions within the public health system about laboratory performance and collaboratively set goals for public health laboratories nationwide.

This initiative is segmented into three distinct phases. The first phase determines methodology related to standards development and ascertains the degree to which APHL members will support standards development and employment. Phase II develops the standards and programmatic evaluation criteria. And the final phase will consist of field testing, validation and implementation of the standards. APHL has contracted with Milne & Associates—a national consulting firm based in Portland, OR, that specializes in public health, community and organizational development—as subject matter experts in the development of these performance standards.

At the onset of Phase I in July 2004, the APHL taskforce that would oversee the project was formed, including representation from APHL members and the CDC. This advisory committee approved a "charter" that would provide vision and context to standards development. The charter also would define the scope of all phases of the project. Following this, a literature search was conducted and three national teleconferences with state public health laboratory directors were convened as a means of measuring support for the concept of laboratory performance standards. Nearly all of the participants indicated a willingness to participate in the development and piloting of the standards; thus it was concluded that development of laboratory system performance standards was feasible and it was recommended that resources be identified to proceed to the development stage. We learned this past summer that the CDC’s Division of Laboratory Systems allocated funds to APHL to bolster this effort.

I recently attended the project kick-off meeting for Phase II held on October 24 in Portland, Oregon, where a workgroup comprising APHL members, staff, consultants and CDC colleagues met to refine the project charter and to hammer out deliverables for the remainder of this project. I cannot stress enough the importance that this project holds for public health laboratories across the nation. Many national organizations such as ASTHO and NACCHO are moving in a parallel path, pressing forward projects to develop accreditation programs for state and local public health agencies.

Public health laboratories are a critical part of the public health system—we must take charge of our own future by paving a clear pathway for total quality improvement within member laboratories. The momentum is now, the goal is clear: consensus and participation to improve our performance.

Sincerely,

Scott Becker, MS
APHL Executive Director
Staff News

Yvette Benjamin, PA, MPH, recently resigned her position of director of global health. In her three years at APHL, Benjamin’s staff grew to four full-time positions and one part-time advisor position, the program budget grew from $771,000 to over $11 million, and the program became involved in more than 15 PEPFAR/GAP countries in Africa, Haiti and parts of the Caribbean as well as in Brazil, Canada and the former Soviet Union. Benjamin was also instrumental in APHL’s alliance with the World Health Organization and the Canadian Public Health Lab Network. APHL wishes her luck in her future endeavors.

Cicely Garrett, MPP, resigned her position as general ledger accountant to accept a position with the Smithsonian’s Combined Federal Campaign (CFC). Garrett’s contributions to the accounting department and the organization over the last three years are greatly appreciated. APHL wishes her luck in her future endeavors.

Diane Johnson, MPH, global health program manager, has recently been awarded the Kellogg Management Fellowship for Emerging Leaders in Public Health. The fellowship, presented by the University of North Carolina, prepares the next generation of talented public health leaders to serve in significant leadership capacities, focusing on innovative strategies for managing crises in human resources, communications and finances. Johnson will remain in her position at APHL during the nine-month fellowship.

Ralph Timperi, MPH, will serve as acting director of global health. Timperi formerly served as senior advisor to the global health program.

APHL Sustaining Member Program

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

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

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To submit an article for consideration, contact Shauna Dillavou via email, sdillavou@aphl.org.

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