The world can change in a day. Or a morning. That much was demonstrated when four hijacked planes climbed into beautiful blue skies on September 11 and came crashing down with unimaginable horror on the World Trade Center, the Pentagon, and the national psyche.

In the wake of the deadliest attacks ever on American soil, public health laboratorians have found their work abruptly redefined. Long recognized as lynchpins of the nation’s public health system, public health labs are now being viewed in a new light: as integral and perhaps under-prepared parts of the U.S. homeland defense infrastructure.

Public health and microbiology are making headlines, but the news is not good.

“Biological Attack Concerns Spur Warnings. Restoration of Broken Public Health System is Best Preparation, Experts Say”
The Washington Post, 9/22

“Nation’s Civil Defense Could Prove to Be Inadequate Against a Germ or Toxic Attack”
The New York Times, 9/23

“Bioterrorism Vulnerability Cited. GAO Warns That Health Departments Are Ill-Equipped”
The Washington Post, 9/28

“Iowans didn’t used to think they were vulnerable (to a biological or chemical terror attack),” observed APHL President and University of Iowa microbiologist Mary Gilchrist in an interview. “People are now convinced that it’s an imminent threat.”

Continued on page 2...
David Maserang, Chief, Division of Laboratories, Illinois Department of Public Health, noted separately that the attacks “made very credible virtually any scenario you might want to imagine involving people’s capacity to do ill.”

Preventing for the Unthinkable

What are the immediate implications for public health laboratories? How can they achieve optimal preparedness?

According to James Pearson, a co-chair of the Laboratory Response Network working group and the chair of the APHL Emergency Preparedness and Response (EPR) Committee, increased security is a top priority. In a telephone interview, he exhorted laboratory staff to consider uncomfortable, but critical questions: “Is my lab a potential target? What do I need to do now?” “Kick your mind into gear,” he said.

Pearson noted that in his own state laboratory in Richmond, Virginia, security is tight. The building’s exterior doors are locked. Lobby access is limited to state employees with picture identification cards and others with a valid driver’s license and verified business in the building. Laboratory doors are closed to everyone except staff with electronic swipe cards. And security guards scrutinize all in-coming mail and deliveries.

Gilchrist emphasized that security issues extend to routine laboratory protocols. Strict adherence to chain-of-custody procedures is necessary to safeguard the integrity of lab specimens for possible use in criminal investigations and/or court proceedings. In addition, implementation of recommended safety measures is necessary to safeguard the health of laboratory staff. She noted that APHL has collaborated with the Centers for Disease Control and Prevention (CDC) and the American Society for Microbiology (ASM) to develop specific Level A laboratory safety procedures. These should be “a routine part of the job,” said Gilchrist, stressing that they are simple and suitable for all laboratories, small, medium or large.

Basic laboratory functions are all the more critical in the aftermath of the terror attacks. Laboratorians should be “scanning the horizon,” on the lookout for anything resembling an agent of terrorism, said Gilchrist. Not only does quick and accurate analysis benefit emergency response personnel and the general public, she said, it also helps ensure that “laboratory staff themselves are less at risk.”

Although the CDC called on public health officials to begin heightened disease surveillance as of September 11, Pearson said Virginia has been conducting syndromic surveillance since early this year to watch for possible premeditated disease outbreaks timed to coincide with the Presidential inauguration or (now cancelled) World Bank meeting. Now, he remarked, it is especially important that laboratories be “alert to any unusual event; chemical, radiologic or biologic.”

Another concern is emergency communications, observed Maserang, who in addition to running Illinois’ state lab is the commanding officer of an expeditionary field military hospital. “Most states are pretty hapless in taking charge of situations like (the September 11 attacks),” he said. “I fear for our ability to do what (emergency personnel) did in New York.” Public health laboratories must be able to interface via secure channels not only with other public health staff at all levels, but with hospital and reference labs, emergency management personnel, law enforcement and environmental/agricultural agencies, and perhaps military and intelligence authorities. “Command and control has got to be a much bigger issue for states that it used to be,” Maserang said.

Unfortunately, as laboratory staff accelerate efforts to prepare for the worst possible contingencies, they face new distractions. One is an onslaught of terror hoaxes, an issue discussed at the first meeting of the APHL EPR Committee on October 2. Another is sudden media interest in the workings of public health laboratories and the views of microbiologists. (APHL’s president has been interviewed by ABC News, 60 Minutes, and The New York Times, and its executive director by The Wall Street Journal since the hijackings occurred.)
Despite these complications, important work is going forward. Terrorism “is not just a new problem,” said Gilchrist, “(APHL members) have felt all along that it was an imminent threat.” On October 3, Gilchrist supplied testimony for a high-profile meeting of the Senate Appropriations Subcommittee on Labor, Health, and Human Services, requesting a minimum of $125 million in additional funding for three programs that APHL has long supported, but that have gained new urgency since September 11:

- The **Laboratory Response Network**, a multi-level and tightly coordinated system of public health laboratories prepared to accept samples from clinicians, law enforcement agencies, emergency personnel, the military, and others in the event of a possible terrorist attack. (See the July/August 2001 issue of The APHL Minute for more details.)

- The **National Laboratory System**, a CDC-funded demonstration project (active in Minnesota, Michigan, Nebraska and Washington State), designed to improve communication between public health laboratories and private clinical laboratories, ultimately achieving an inclusive and well-coordinated assemblage of alert and responsive laboratories.

- Development of a **chemical terrorism preparedness program** that will expand the number of laboratories able to handle chemical and other agents present in human and environmental samples. (Currently only five state public health laboratories serve as “surge capacity” laboratories for the CDC in the event the agency needs support to analyze chemicals found in human samples.)

It is no secret that public health laboratories have long been under-funded, and, as stated in an APHL communications piece, have “crippling gaps in capability” as a result. A recently released General Accounting Office report on bioterrorism concludes that “reductions in public health laboratory staffing and training have affected the ability of state and local authorities to identify biological agents.” It points out that even the relatively small West Nile virus outbreak in 1999 taxed federal, state, and local laboratory resources.

APHL is working diligently to increase critical investments in the public health laboratory infrastructure, including funding for state-of-the-art information technology, training and recruitment of doctoral level staff, containment facilities for high-risk pathogens and chemical agents, continuing education for current laboratory staff, and regular capital equipment upgrades. “Funding for public health laboratories needs to increase dramatically,” said Gilchrist, “and there is reason to be optimistic that it will.”

In addition, APHL is working with a host of partners—American Society for Clinical Pathology, ASM, American Clinical Laboratory Association, American Association of Bioanalysts, and others—to improve links with the private sector, links that have steadily evaporated over the past decade as private labs have turned more and more to reference labs for many of the services public health laboratories provide. The construct envisioned as a “national laboratory system” does not now exist, said Gilchrist.

Similarly, APHL’s EPR Committee is aiming to streamline communications among public health laboratories and myriad national and state entities, including food safety agencies, the Environmental Protection Agency and the mobile analytical laboratories operated by the National Guard.

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Honor the Past; Look to the Future

America’s First Line of Defense:  
The Public Health Laboratory, 1850-1950

by Bill Beck, Lakeside Writers’ Group

“Take interest, I implore you, in those sacred dwellings which are designated by the expressive term: Laboratories. Demand that they be multiplied; that they be adorned. These are the temples of the future...Temples of well-being and happiness. There it is that humanity grows greater, stronger, better.”

-Louis Pasteur

The public health laboratory has long been the first line of defense in America’s centuries-long battle against disease.

Public health laboratorians have been unsung heroes in the war to identify and eradicate bacterial, viral, water- and food-borne illnesses. Since the 1870s, when states and territories first began to establish public health laboratories, the microscope, microbial cultures, serologic testing and human intuition have been among the weapons employed to keep Americans safe from disease and sickness.

The evolution of the public health laboratory has not been without its starts and stops. Prior to the 1880s and 1890s, medical science was still struggling with the origin of disease. In many ways, the medical community of the mid-19th century was no better able to identify and isolate disease vectors than the physician of the 17th century. Hundreds of thousands of Union and Confederate Army combatants during the War Between the States died of infectious disease or of infection from survivable battlefield wounds.

Childhood disease took a fearsome toll in 19th century America. Infants and toddlers died routinely and quickly when scourges such as measles, mumps, diphtheria, whooping cough and scarlet fever swept through a community.

Sepsis was an ever-present handmaiden to the midwives attending women in childbirth. Cities dumped their sewage untreated into rivers and streams, and downstream communities experienced the all-too-frequent ravages of typhoid fever. In 1900, the three leading causes of death in the United States were pneumonia, tuberculosis and diarrhea. Tuberculosis alone killed 194 of every 100,000 U.S. residents at the turn of the last century. In 1900, nearly one-third of all deaths in the U.S. occurred among children five years of age or younger.

As late as the winter of 1918-1919, more Americans died in a worldwide influenza pandemic than had been killed in World War I.

Without an effective public health laboratory system, there was literally no warning when disease struck an American community. And without warning, there was no prevention.

Creation of Public Health Laboratories

The first major breakthrough in the war against disease came in the 1880s when medical scientists in Europe and the U.S. began to discover the microbes that caused infectious diseases such as tuberculosis, cholera, typhoid fever and diphtheria. The groundbreaking work done by Louis
Pasteur in the 1850s and Robert Koch in the 1870s proved that germs and microorganisms were responsible for many of the diseases that threatened human health. Champions of the germ theory of disease on both sides of the Atlantic Ocean gradually took charge of medical science during the last two decades of the 1800s. But industrialization and urbanization in America and Europe had created conditions in which disease could spread much faster than in a rural, non-industrial society. What was clearly lacking in the late 19th century was a public health infrastructure which could deliver timely warnings to a population that was increasingly at risk.

The roots of the public health laboratory movement in the United States and its territories were put down in 1887 in New York City. In the 1870s, the Marine Hospital Service had been formed as a relief organization to tend to the needs of sick American seamen. In 1878, Congress enacted a law to check the spread of infectious and communicable diseases, such as cholera, smallpox and yellow fever. In 1887, the renamed Public Health Service opened the nation’s first bacteriological laboratory at the Marine Hospital on Staten Island in New York’s Harbor. In 1892, the hospital laboratory facilities would be moved to the Washington, D.C. area, and the laboratories would become the precursor to the National Institutes of Health (NIH).

The creation of a microbiological laboratory at the Marine Hospital was quickly followed by state action establishing public health laboratories. As early as 1886, Kansas became the first state in the U.S. to create a public health laboratory as part of its public response to the spread of infectious disease. Minnesota followed in 1888, and Ohio was the third state to establish a public health laboratory in 1889. By 1900, fully two-thirds of the states and territories had established public health departments, and a total of 14 states had moved to form full-time, fully-staffed public health laboratories. The first county health departments were established in 1908.

The public health laboratory at the turn of the last century was just one tool in a coordinated societal response in the fight against disease. A combination of public health initiatives, growing engineering and scientific expertise, and aggressive public policies affecting community health contributed to dramatic victories in the war against infectious disease.

As early as 1887, the Massachusetts Board of Health founded its Lawrence Experimental Station to fashion an interdisciplinary approach to public health problems. The first task of the innovative new station and its staff of young engineers, chemists and biologists was to examine ways to purify the Bay State’s water and to treat its sewage.

Armed with the knowledge from scientists working in public health laboratories that disease was often spread by contaminated water and food, federal, state and local governments moved swiftly during the 1890s and early 1900s to enact legislation and establish public health initiatives to protect the American people. In 1906, Congress passed, and President Theodore Roosevelt signed into law the Pure Food and Drug Act, in the wake of journalist Upton Sinclair’s expose of the nation’s meatpacking industry.

The rise of a Progressive political movement in many of the nation’s states and cities led to the municipalization of thousands of the country’s water supply systems. Communities from one end of the U.S. to the other created safe water supply and sewage treatment systems during the waning years of the 19th century and the first decades of the 20th century. In Superior, Wisconsin, intake pipes were laid out into Lake Superior and filters were installed in a new pumping station in 1889-1890 to supplant reliance on contaminated water that had previously been taken from a shallow bay adjacent to the city. The city’s neighbors across the bay in Duluth, Minnesota experienced a typhoid epidemic that killed 100 residents in 1895; five years later, voters swept in a reform ticket that extended the city’s intake water pipes much further out into Lake Superior.

The board of trustees elected in Muscatine, Iowa in 1900 came into office with a simple policy: Good water. More water. Foresightedness.
Equitable rates. They bonded the city to the tune of $100,000 to buy the existing waterworks from a private concern and upgrade it to contemporary safety standards.\textsuperscript{15} In 1905, the Moorhead Water & Light Department in Minnesota’s Red River Valley drilled a well 300 feet into an artesian aquifer beneath the city.\textsuperscript{16} The citizens of Cedarburg, Wisconsin northwest of Milwaukee voted in 1920 to spend $186,000 to build six miles of water and sewer pipes, 60 fire hydrants, a water tower and equipment capable of pumping nearly 150,000 gallons of clean water a day.\textsuperscript{17}

For most American communities, clean water became a standard in the early part of the 20\textsuperscript{th} century. And a key component of that standard was the bacteriological testing of water that was carried on in most state public health laboratories.

The Emergence of Public Health Laboratory Practice

The gradual elimination of waterborne disease and contaminated food in the early years of the 20\textsuperscript{th} century was accompanied by huge strides in the laboratory development of vaccines to prevent the childhood killers of previous years. The 1901 discovery that bacteriolysis by immune serum required a heat table serum – today referred to as a complement – opened the way for diagnostic tests for many infectious diseases.\textsuperscript{18}

Diphtheria antitoxins developed in laboratories in the U.S. and Europe were available to physicians as early as 1891.\textsuperscript{19} The discovery that diphtheria serum could be injected into sick children and literally make the difference between life and death didn’t immediately spread to the public health and medical community as a whole. In Illinois, the State Board of Health equipped a bacteriological laboratory in 1901 to diagnose diphtheria, tuberculosis and typhoid fever. Six years later, the Illinois General Assembly appropriated $15,000 to provide for the distribution of diphtheria antitoxin to the state’s children. By World War I, vaccination had become such an accepted practice that the by then renamed Illinois Department of Public Health initiated a program to vaccinate every Illinois soldier and sailor against smallpox and typhoid fever.\textsuperscript{20}

Some of the clinicians who manned the early state public health laboratories, like their colleagues in the private medical and hospital sector, were educated in Europe. Medical schools in London, Paris, Vienna and Berlin were early proponents of the philosophy that “a thoroughly equipped laboratory for the scientific investigation of clinical problems” was a legitimate, necessary and critical component of medical and public health practice.\textsuperscript{21}

Public health laboratories in the states and territories were frequently an afterthought to the then more glamorized clinical practice of medicine during the first quarter of the 20\textsuperscript{th} century. The evolution of a professional staff proceeded in fits and starts. And, states often initially mounted a fragmented response to public health threats during the early 1900s.

Texas is a good example. As early as 1896, the state’s health officer requested an appropriation of $2,000 a year “to employ an expert in microscopy and a chemist to analyze drinking water and perform bacteriological examinations.”\textsuperscript{22} In 1904, the state opened the Texas Pasteur Institute as a branch of the Austin Lunatic Asylum. The laboratories of the Institute were used to prepare rabies vaccine until 1934.

The state’s Bacteriological Laboratory, located across town on the third floor of the State Capitol, was opened in 1912 when the State Legislature appropriated $3,600 to employ a full-time bacteriologist and chemist. Prior to that time, the State Health Department had obtained the services of the pathologist of the University of Texas Medical Department.

During the first decade of the century, the State Health Department and its Bacteriological Laboratory were primarily concerned with testing water for typhoid bacteria. Vic Ehlers, who joined the staff of the State Health Department in 1915 as a sanitary engineer, recalled collecting samples of drinking water and performing laboratory tests himself.\textsuperscript{23}

In 1906, Texas created a third laboratory presence. The passage of legislation creating the state’s Pure Food Commission contained the provision that...
the Dairy and Food Commissioner should be an analytical chemist and bacteriologist licensed to conduct food tests. Unlike the Bacteriological Laboratory and the Texas Pasteur Institute, the Commission was located at the state’s College of Industrial Arts in Denton.  

For much of the 1910s and 1920s, the three Texas public health laboratories expanded their scope of responsibilities. By World War I, the laboratories were testing city water supplies, examining stool samples for hookworm, conducting sputum tests for tuberculosis, and doing colloidal gold tests for syphilis. In 1922, the Bacteriological Laboratory began using the new Wasserman test for syphilis. Three years later, the laboratory was producing silver nitrate for use in the eyes of newborn infants.

In the early 1920s, the Bacteriological Laboratory and the Food and Drug Laboratory were combined in office space located southeast of the Texas Senate. The Texas Legislature brought all three laboratories together in 1928 when they consolidated the state’s laboratory facilities into the Bureau of Laboratories of the State Health Department. The legislature appropriated $12,500 for the purchase of equipment and the construction of a two-story, red-brick building at the corner of Fifth and Neches in Austin to house the new Bureau.

**A More Professional Approach**

The increasing professionalism of public health laboratory staff during the 1920s and 1930s was reflected in the strengthening of state licensing requirements. In 1932, the Public Health Council of the State of New York established a regulation that qualifications for state, county and city public health laboratory directors in the Empire State would “include an adequate knowledge of pathology and bacteriology, and, subsequent to graduation, at least four years training and experience in pathologic and bacteriologic work, approved by the Public Health Council.”

Increasing professionalism also led public health laboratory directors to come together to discuss areas of common concern. As early as 1898, bacteriologist-members of the Society of American Naturalists began discussing the feasibility of creating a professional society. The next year, 59 bacteriologists attended the Society’s annual meeting in New Haven, Connecticut, and approved the formation of the Society of American Bacteriologists, the direct lineal predecessor of the American Microbiological Society.

Another professional society that was organized at about the same time as the predecessor of the American Microbiological Society was the Laboratory Section of the American Public Health Association (APHA). Founded in 1872, APHA was initially a forum for physicians to discuss issues of public health concern. But the increasing presence of bacteriologists in the public health field led the Association to agree that non-physician members of the Association should have a vehicle to address their concerns.

At APHA’s 1899 meeting in Minneapolis, Minnesota, the newly-formed Committee of Laboratories held a one-day meeting at the Laboratory of Medical Sciences at the University of Minnesota. Out of that one-day meeting arose the predecessor of the Laboratory Section of APHA.

Up until the years immediately following World War I, the Society of American Bacteriologists and the Laboratory Section of the APHA were the only organizations in the U.S. that represented public health laboratory professionals. But many of the members of the two organizations were then associated with university laboratories and hospital clinical practices. Those working in the field of directing state and territorial public health laboratory practice really had no mechanism where they could gather and talk about the huge number of issues they faced every day.

In 1921, T.F. Sellers, the director of the Georgia State Board of Health Laboratory, stepped up to a podium in the Piedmont Hotel in Atlanta and gavelled to order the first meeting of what would become the Southern Public Health Laboratory Association, and later the State Laboratory Directors’ Conference. In attendance were public health laboratory directors from eight southern states, **continued on page 13...**
The events following the September 11 terror attack have had, and will continue to have a major impact on our public health community. Not long after we began to pick ourselves up and dust off, the threat of bioterrorism was reported by the press. As the public grapples with safety concerns, issues that would have seemed fantastical in August—stockpiling gas masks or limiting crop duster fly-overs—now must be weighed with care.

Perhaps because I had been so actively involved in helping to craft the CDC bioterrorism response plan, I received a number of calls from the press on this subject. After authorities learned that some of the hijackers had inquired about crop dusters, stadiums began to restrict fly-overs. I endorsed the restricted fly-overs, but came out against the use of gas or biological masks due to the difficulty of procuring a mask that could filter out all possible biological or chemical agents and the impracticality of wearing one 24 hours a day, 7 days a week. I tried to convey a realistic, yet calming message: With prudent controls in place, we can minimize the number of Americans affected by a biological attack, even if we cannot prevent the attack. Thus, although our society as a whole is at risk, individual citizens should consider their personal risk to be somewhere below the level of risk that they would accept for other potentially fatal encounters. I noted that special groups in the U.S. or abroad may be at greater risk and that this may justify their making different safety decisions. In the meantime, U.S. residents should be vigilant. For example, inappropriate use of an insecticide spraying device (e.g., out-of-season or out-of-place) should arouse suspicion and be reported to appropriate authorities.

The FBI notified APHL that Level B and C laboratories should assume a low profile, restricting circulation of identifiable staff photos, as well as information about their location. When we forwarded that information to the lab directors, some agreed and others took exception. It was a challenge to conform to those guidelines here in Iowa. We have maps of our location on our web site. It is hard to serve behind the scenes when we have a public role, but we certainly should protect the individual identity of our staff members if they so wish it.

Not long thereafter, our Washington office began to get calls from Congressional staff, asking for APHL input on the needs of the public health laboratory community in order to assure an optimal response to any biological attack. Luckily, Scott Becker and his team are well known to key staffers and are trusted by them to provide balanced input. There have been bills, hearings, and commissions. Funding for public health laboratories will likely increase substantially, and we can breathe more easily knowing that we will be able to provide sustained surge capacity when it is needed.

The latest book on bioterrorism, Germs—Biological Weapons and America’s Secret War, by Miller, Engelberg and Broad, is a good read and highlights the role that our own Mike Skeels played in unraveling the Oregon event in the 1980’s. Mike is mentioned several times and it all plays out in Chapter 1. So pick up a copy today and maybe he will autograph it for you.

As I finish this, the anthrax case in Florida has been known for 24 hours. Vigilance is the watchword of the day.

Sincerely,

Mary Gilchrist, PhD, D(ABMM)
President
Dear Members:

As I write this, I have just returned from my third Congressional hearing in as many days dealing with public health efforts to combat bioterrorism. Before this past month, the Association made numerous attempts to educate policymakers and other decision makers about the important role public health laboratories play in disease control and prevention, and I can honestly report that we were making strides. But they were slow, deliberate strides. Nothing in our wildest imagination would have led us to believe that such an incredible amount of attention would be paid to our concerns until September 11th. We know our member laboratories have been working in high intensity conditions over the past month. APHL too is working at full gear representing your interests.

It is with mixed emotion that I report on the tremendous leap forward we have made in the past few weeks. We have contributed to Congressional testimony on multiple occasions; we have fielded an unprecedented number of press calls; and we are trying to be as responsive as possible to an influx of member and public inquiries. Most of this attention occurred prior to the discovery of anthrax in Florida—which has prompted a whole new wave of interest. I’m pleased at the attention our issues are getting, but saddened that it took a reign of terror to do it.

Earlier this week I attended a Senate hearing at which all subcommittee members were present. Usually only Hollywood stars bring all members to the hearing room, but none were testifying that day. No, that day public health leaders—D.A. Henderson, Mike Osterholm, and Mohammad Akhter, and others—were the stars. Congressional leaders heard the pleas of those testifying and responded with thoughtful commentary. Instead of posturing, there was a real show of concern for American communities and for the needs of the public health system.

PHLs were also in the spotlight, as each successive panel made some mention of the need to support laboratory enhancements, and also recognized the fine work being done by Florida’s public health laboratory in the recent anthrax case. To me, this recognition (on behalf of all PHLs) was remarkable; it was just a few years ago that there was talk nationally of privatization or regionalization of the laboratory system, and some questioned the need to have PHLs at all. No one questions this need today.

We will soon know more about the emergency appropriations and how well public health will fare. We anticipate a major infusion of funds; to the tune of $1.4-1.8 billion. Yes, that’s right . . . billion. Until the past few weeks, I never had the need to count that high. I don’t yet know what amount will be earmarked for public health laboratories, but I do know that we are pressing for a minimum of $125 million, not including biosecurity, which could bring the figure higher. These funds would bolster laboratories’ ability to detect biological agents, rev up a chemical laboratory preparedness program, and provide support for the much-needed National Laboratory System, now just a demonstration project. I know that many of you are actively working with your key Members of Congress, and for that we are all grateful.

Honor the Past; Look To the Future

You will note that with this issue of The Minute A we formally begin our Fiftieth Anniversary celebration. In each issue of The Minute between now and our annual meeting in June, we will honor the past by publishing one of a series of articles reviewing the history of public health laboratories and APHL, decade by decade. I hope you enjoy the first installment, beginning on page 4.

Sincerely,

Scott J. Becker
October 9, 2001
The APHL Board of Directors met via conference call on October 2, 2001. Below please find a summary of recent Board actions. For further information, or if you wish to have a full copy of the minutes sent to you, please contact Kelly Deeb via email at kdeeb@aphl.org or at 202.822.5227, ext. 221.

- √ Heard a legislative report on bioterrorism and affirmed the Association’s commitment to advocacy around this issue
- √ Affirmed the current APHL mission and vision statements
- √ Approved a date change for the Infectious Disease Meeting, now to be held in March, 2003
- √ Appointed Bruce Kleger, DrPH to serve as APHL liaison for CLIA Waiver issues, to interface with other organizations and to develop a position statement
- √ Reviewed financial statements relating to dues payments by members
- √ Instructed staff to assemble a working group to further develop the Center for Public Health

### Member News

**Joseph McDade, Laboratorian Extraordinaire, Steps Down**

Joseph E. McDade, deputy director of the CDC National Center for Infectious Disease (NCID) retired in June after 26 years of service that resulted in numerous ground-breaking contributions to infectious disease control and public health. McDade joined CDC in 1975 as a supervisory research biologist in the Division of Viral Diseases. In 1976, he isolated and identified Legionella pneumophila, a bacterium responsible for dozens of deaths in Philadelphia. In recognition of his work, one species of the bacterium, Legionella micdadei, was named after him. In the 1980’s, McDade identified the cause of ehrlichiosis, a tick-borne illness. Later, serving as director of the World Health Organization Collaborating Center for Rickettsial Reference and Research, and as chief, Viral and Rickettsial Zoonoses Branch, Division of Viral and Rickettsial Diseases, he directed research that resulted in medical breakthroughs in the prevention and diagnosis of Rocky Mountain spotted fever, Q fever, and typhus.

From 1989 to 1998, McDade served as NCID’s deputy director for laboratory science, where he worked to establish new laboratory safety protocols and to improve public health laboratory training. His leadership as overall deputy director since 1998 led to the creation of the journal *Emerging Infectious Diseases*.

McDade and his wife Judy will continue to live in Georgia, where he plans to teach and consult.
STAFF NEWS

Marilyn Furbush joined APHL on September 4 as executive assistant to Executive Director Scott Becker and general office manager. Furbush has had past experience in both positions. Her previous employers include MCI WorldCom, Renaissance Worldwide, and The Catholic University of America. She can be reached at the APHL Washington office at extension 200.

Farhia Mussa became APHL’s program manager for newborn screening and genetics on October 1. In this position, she will staff the Quality Assurance and Quality Control Subcommittee of the Newborn Screening and Genetics in Public Health Committee, support additional genetics activities, and work with National Laboratory Training Network to provide additional Newborn Screening training opportunities. Mussa completed her Masters of Public Health at Hahnemann University in Philadelphia, and most recently worked for the Philadelphia Department of Health, winding down the Healthy Start program when it lost funding. Her position at APHL is supported by the Division of Laboratory Sciences at the National Center for Environmental Health. Mussa can be reached at extension 235 at the Washington office.

Sharon Rolando joined APHL as the PulseNet program manager on September 26. Rolando will be working with the state laboratories and the CDC to monitor, implement, and evaluate improvements to the ever-growing PulseNet program. She has just completed an APHL/CDC Emerging Infectious Disease Fellowship at the Massachusetts State Laboratory where she worked on several molecular epidemiology projects. Sharon has a Masters of Health Science from Johns Hopkins School of Public Health, and is a medical technologist with experience as both a clinical microbiologist and a laboratory supervisor at the Greater Baltimore Medical Center and Johns Hopkins Hospital. She can be reached at APHL’s Washington office at extension 205.

On September 24, Kim Watkins joined APHL as accounts payable clerk. Watkins comes to the Association from USA Today, and has had three years of data entry and accounts payable experience. She can be reached at the APHL Washington office at extension 233.

Michele Williams joined APHL as infectious disease program coordinator on September 17. Williams has a strong background in program and project administration, and broad computer software experience. She previously worked at Technology Service Corporation, where she concentrated on record and database management projects. Prior to that work, she spent 5 years at the Association of American Medical Colleges. Williams can be reached at APHL’s Washington office at extension 231.

Ed Yurchik joined APHL on October 10 as registrar. Yurchik has 23 years of association experience, primarily in the area of membership services. He comes to APHL from the National Association of Retired Federal Employees, where he worked in the membership department for 18 years. Yurchik can be reached at the APHL Washington office at extension 215.
Thirty-four Class VII pre- and post-doctoral scientists participating in the Emerging Infectious Disease (EID) Laboratory Fellowship Program have begun work in their assigned host laboratories. The fellows are posted at 6 state and local labs (in Alaska, Florida, Illinois, Massachusetts, New York, and Virginia), as well as CDC laboratories in Atlanta, Fort Collins, and Anchorage. This promises to be an exciting and productive year for the EID Fellows as well as their host laboratories.

What are our fellows up to? Here is a sampling of their good works:

**Sandra Smole, PhD**, a Class VI research fellow under Dr. Ralph Timperi at the Massachusetts State Laboratory, will present a poster—“Development of Taqman targets for rapid identification of *Burkholderia pseudomallei* by random sequencing of a genomic library”—at the November meeting of the American Society of Tropical Medicine and Hygiene (ASTMH).

Former EID Fellow **Sharon Rolando** is a welcome addition to the staff of APHL’s Washington office. Rolando is now the PulseNet manager and will be working with state laboratories and the CDC to monitor, implement, and evaluate improvements to the expanding PulseNet program. As a Class VI Training Fellow, Rolando was located in the Massachusetts State Laboratory where she worked on several molecular epidemiology projects.

**Jane Costa, PhD**, an International EID Fellow from Brazil, submitted a manuscript for publication in the *Emerging Infectious Disease Journal*. It is entitled “The emergence of *Triatoma brasiliensis* as the primary domestic vector of chagas disease in Northeastern Brazil.” Costa works with Dr. C. Ben Beard in the CDC’s Division of Parasitic Diseases.

**Jean Bendik**, a Class VI Training Fellow, will present an abstract of her research at the ASTMH meeting in Atlanta in November. Bendik has been researching *Cyclospora spp* transmission and infection in Haiti. In the past year, she traveled to Haiti several times to conduct epidemiological surveys of villages, and now works with Dr. Pat Lammie in the Division of Parasitic Diseases at the CDC in Atlanta.

**Looking Ahead**

APHL is actively recruiting the next class of EID fellows. The new application and timetable for the Training and Research Fellowships is available both online (at www.aphl.org) and by mail. The application deadline is **March 1, 2002**.

APHL is in the process of revising the host laboratory application. All local and state public health laboratories will be notified when the new application is available. In addition, the Association will soon have ready an application kit to assist prospective host laboratories in writing a competitive billet to increase the level of state laboratory participation in the program. Again, the application will be available online and, in fact, all interested host laboratories will be required to submit the new electronic version of the application for consideration. It is our hope that this new format will streamline both the application and matching process. The deadline for receipt of completed host laboratory applications at APHL is **March 15, 2002**.
EID FELLOWSHIP NEWS

EHLS Traineeship

The Environmental Health Laboratory Science (EHLS) Traineeship program provides opportunities for state laboratory personnel to receive training in practices related to environmental health laboratory sciences. Approved staff participate in short-term training at local, state, or CDC public health laboratories. Transportation and lodging costs are covered under the program. Applications are now being accepted on a rolling basis, and interested parties are encouraged to apply. For further information or an application for the EID Fellowship Program or the EHLS Traineeship Program, please visit APHL’s website at www.aphl.org, or contact Heather Roney, Fellowship Program Manager at hroney@aphl.org or 202.822.5227 extension 218.

...Continued from page 7

as well as the director of the Savannah, Georgia public health laboratory and representatives from the International Health Board in New York and the Georgia State Board of Health. 30

Unlike the bacteriologists, the public health directors were more interested in the practical application of public health laboratory administration. Topics of papers presented at that first meeting covered such matters as the relation of the city laboratory to the state laboratory; the proper function of the state board of health laboratory; the standardization of laboratory technique; the proper way to fill out a specimen information blank; and the feasibility of establishing sub-laboratory systems. 31

Dr. F.F. Russell, General Director of the International Health Board in New York, gave the keynote address to end the first meeting of the then Southern Public Health Laboratory Association. Russell urged his audience to think big.

"The field of the public health laboratory should not be narrow," he said. "It should not be confined to diagnosis of infectious diseases ... Not many laboratories are able to do tissue work. On the other hand, if a laboratory is so favorably situated that it can have a pathologist on its staff, I do not see why the laboratory should not do tissue work." 32

Dr. Russell’s address was prophetic. By the time the U.S. entered World War II 20 years later, the state and territorial public health laboratory had become a key part of America’s first line of defense in the war against infectious disease and contaminated food and water.
ENVIRONMENTAL HEALTH

Water Quality

National Environmental Monitoring Index (NEMI) – The Methods and Data Comparability Board of the National Water Quality Council has been developing NEMI as a mechanism to compare the performance and cost of analytical methods to monitor water quality. The NEMI website—infotrek.er.usgs.gov/nemi—is still under development, but you may wish to bookmark it and follow future developments.

EPA Selected Office of Water Methods and Guidance, Version 2 – This CD ROM, which was made available at the AOAC International meeting in June, can be obtained by contacting the Environmental Protection Agency Office of Water, Office of Science and Technology, at 202-260-7120. Inquire about publication number EPA-821-C-01-004.

Food Safety

Elsa A. Murano approved as Under Secretary of Agriculture for Food Safety – On September 26, the full Senate confirmed Murano as the top food safety expert in the U.S. Department of Agriculture. She will work with federal agencies, food industry representatives and consumer groups to improve food safety. Before her nomination to this position, Murano worked as a professor of animal science and director for the Center for Food Safety at Texas A&M University.

Miscellaneous

Electronic Submission of Information to EPA – The Environmental Protection Agency (EPA) has issued a proposed rule to allow electronic reporting to the Agency. The proposal outlines specific criteria which a state’s or tribe’s electronic document receiving system must meet in order to qualify for electronic reporting. In any case, the maintenance and reporting of electronic documents will be completely voluntary. The Agency will accept direct submission of an electronic document only after it has provided public notice that its electronic document receiving system is functional. Comments on this rule are due by November 29. For additional information, contact either David Schwarz or Evi Huffer at the EPA Office of Environmental Information. Schwarz can be reached at (202) 260-2710 or Schwarz.David@EPA.gov; Huffer at (202) 260-8791 or Huffer.Evi@EPA.gov. The proposal was published by EPA in the August 31 issue of the Federal Register, which can be located online at www.frwebgate.access.gpo.gov/cgi-in/getdoc.cgi?dbname=2001_register&docid=01-21810-filed.

West Nile Facts – The U.S. Department of Agriculture has established a website for West Nile Virus information pertaining to both humans and animals: www.nal.usda.gov/awic/wnvirus/wnfacts.htm. The site contains a number of useful hotlinks.

NELAC Update – The National Environmental Laboratory Accreditation Conference (NELAC) has struggled to determine how it will survive and grow into a national program in light of its interdependent relationship with the Environmental Protection Agency (EPA). Jerry Parr, principal of Catalyst Information Resources and long-time NELAC supporter, has incorporated a nonprofit organization, the Institute for National Environmental Laboratory Accreditation (INELA). INELA will facilitate the NELAC meetings, establish and maintain the databases to
support accreditation and proficiency testing activities, train laboratory assessors, and more. INELA Board members are Carol Batterton, Texas Natural Resources Conservation Commission and former NELAC Chair; Chuck Wibby of Environmental Resource Associates; Jackie Sample, Navy Lab Quality and Accreditation Program Manager; and David Speis of Acutest Laboratories. Currently, Parr is the sole staff person; he is seeking EPA funding to launch planned activities.

Genetics & Newborn Screening

In early October, Andrew Faucett, a genetic counselor and Association of Teachers of Preventive Medicine career development awardee assigned to CDC’s PHPPO Division of Laboratory Systems, met with Farhia Mussa, APHL’s program manager for newborn screening and genetics; Eva Perlman; and Lynn Bradley at the APHL Washington office to discuss ways APHL can prepare its members to deal effectively with new genetics and genomics information and technology. Based on a needs assessment, the NLTN has already begun to develop training for competencies in genetics. Many of the ideas generated during this meeting will be integrated into ongoing APHL activities, such as the 2002 Annual Planning Conference program, Minute articles, and a public health laboratory directors’ forum. Other concepts will be presented to the Newborn Screening and Genetics in Public Health Committee for consideration. (Amy Klein, ASTHO Genetics Director, also joined staff for part of these discussions; NACCHO representatives were invited but unable to participate.)

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PHL leaders and members must ready themselves for new challenges, Gilchrist averred. “We’re looking at a world that will never be the same,” said Pearson. “We can’t back off. We have to stay serious about this.”

For more information:

APHL expects Level A laboratory procedures to be posted on the ASM website—www.asmusa.org—in November. In addition, click on “Biological Weapons Control and Bioterrorism Preparedness Information and Resources” to access a compendium of online resources for microbiologists related to these topics.


Model Emergency Response Communications Plan for Infectious Disease Outbreaks and Bioterrorist Events (developed in partnership with APHL and other public health groups) is available from the Association of State and Territorial Directors of Health Promotion and Public Health Education. The report can be viewed or ordered online at www.ASTDHPPHE.org.

The following article, available from the American Society for Microbiology, may also be of interest: Klietmann WF and Ruoff KL. Bioterrorism: implications for the clinical microbiologist. Clinical Microbiology Reviews 2001;14(2):364-381.
Looking Toward the Future: The Hurricanes Mitch and Georges Project Teams Meet in Guatemala
By Areana Quiñones, MPH

At the foot of a looming volcano on the edge of the Spanish colonial city of La Antigua, Guatemala, a discreet sign and simple wooden door on a cobblestone street mark the entrance of the hotel Casa Santo Domingo. This past August, APHL members were ushered through this door into a reception area with high cathedral ceilings, rich crimson walls and an ornate gilded altar, which served as front desk. They walked down long corridors past craggy walls, rustic terra-cotta tiles, and stone urns filled with water and rose petals. Religious art and antiques from the hotel’s past life as a monastery surrounded them. At sunset, the flickering light from hundreds of votive candles enhanced the compound’s mystical aura. But don’t be deceived by the fairy tale setting; APHL members were here to work.

On August 16–17 the APHL Post Hurricanes Mitch and Georges Laboratory Reconstruction Committee convened a meeting of project partners. Representatives from nine countries, the CDC, the US Agency for International Development, and the Pan American Health Organization met to discuss the project’s work to-date, as well as plans for the future, after the project’s official end on December 31.

Representatives from the seven project countries—Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras and Nicaragua—plus Belize and Panama reported on the positive changes in their laboratories and countries, as well as the relationships that have been fostered through collaboration with APHL members and others. Thanks to the project, new laboratory equipment has been purchased and installed; public health staff have been trained on laboratory methodologies, including basic bacteriology, PCR, and viral serology; and areas within some laboratories have been completely renovated.

The greatest accomplishments, however, are the working relationships that have grown from the shared commitment to achieve health for all people of the Americas. Certainly, many key relationships have been formed among APHL members and their colleagues in project countries. The project paired APHL members with laboratory directors from the sub-region. Individual pairs work together to develop training activities, equipment lists, and plans to improve laboratory communication networks within each country.

APHL members agree that the opportunity to work with colleagues outside their own laboratories and states has been invaluable. “My participation (in this project) has given me a fresh perspective on my own daily job responsibilities; and I have gotten to work with a great bunch of dedicated people,” remarked Sally Liska, Director, San Francisco Public Health Laboratory, and project liaison to Haiti.

Yvonne Hale, from the Florida Department of Health Bureau of Laboratories and liaison to El Salvador was inspired by the project. “I have met colleagues who accomplish their work in the face of amazing hurdles, without giving up,” she said.

Another important relationship is that among the countries themselves. Border disputes and economic and political differences have historically created tension among many of the Central American and Caribbean partners. Throughout this project, differences have been set aside and lab directors have begun to communicate regularly via e-mail on various issues that affect their laboratories and the region.
**GLOBAL HEALTH**

"Local Public Health laboratories have become aware of their importance and have developed self-sustaining professional networks within the sub-region," said José Campione, from the Lab Center for Disease Control in Canada, and liaison to the Dominican Republic.

John Hunt, liaison to Guatemala, summed up the project’s success nicely: “The greatest accomplishment of the project has been the facilitation of communication among laboratorians and epidemiologists from Central American and the Caribbean, focusing on the importance of the laboratory in the overall process of assuring and improving public health. This communication culminated quietly but dramatically in a grassroots resolution at the close of the meeting in Antigua, Guatemala to establish a committee for continuing collaboration and the establishment of a sub-regional association of public health laboratories.”

For the team working on the Hurricane Mitch and Georges Project, the beautiful setting of the hotel in Antigua was augmented by the great accomplishments that have been achieved throughout the project and the knowledge that their new-found colleagues are committed to ongoing collaboration.

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**APHL Represented at Guatemala’s National Health Laboratory for Official Delivery and Handoff of Project Mitch/Georges Laboratory Equipment**

By John Hunt, PhD

The delivery of the first of two shipments of laboratory equipment and supplies, purchased through the APHL Hurricanes Mitch and Georges Project and destined for public health labs in Guatemala, was officially acknowledged at a ceremony held at the Guatemalan National Health Laboratory near Guatemala City on August 10.

The ceremony was carried live on national radio within Guatemala, with members of the local press in attendance. Following the Guatemalan national anthem, the chief of the National Health Laboratory, Licenciada Evenora de Bonatti, described the objectives of the project, which include training epidemiologists, upgrading the laboratories of the country’s public health system with new equipment, and providing continuing education for laboratory staff. Stanley Terrell of USAID commented on the project from the U.S. Federal funding perspective.

John Hunt, an APHL member who has served as the project’s Guatemala liaison and technical advisor, acknowledged the efforts made by the Guatemalan health ministry and the national health laboratory to move the project from its initial planning stages to the present concrete results. He said (in a Spanish statement written by Areana Quiñones):

It is with much pride that I speak to you today on the occasion of the hand over of laboratory equipment. This equipment will be used for work of the utmost importance: reliable diagnostic testing, and surveillance for infectious diseases. This work contributes to the improvement of the health of the Guatemalan people and to the formation of a Central American laboratory network. During the past year and a half, I have had the pleasure of working with the Central Laboratory of Guatemala. Despite obstacles such as language and distance, we have accomplished much. I congratulate the laboratory team and the Ministry of Health for their well-executed endeavor, and I greatly appreciate the opportunity to participate in this important ceremony today. Thank you.

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PHL Reps Bring Technical Assistance to Zimbabwe; Bring Home Tales of HIV/AIDS Devastation

About Zimbabwe:
Full country name: Republic of Zimbabwe
Area: 390,000 sq km
Population: 11.2 million
Capital city: Harare (population 1.6 million)
People: Shona(76%), Ndebele(18%), Batonga(2%), Shangaan(1%), Venda(1%), European, Asian
Languages: Shona, Ndebele, English
Religions: Christian, Mwari
Government: Parliamentary democracy
President: Robert Gabriel Mugabe

In late July, an APHL team consisting of Burton Wilcke (VT), William Becker (OH), Gregory Hayes (RI), and Bhavna Lall (APHL project manager) traveled to Zimbabwe on a fact-finding and technical assistance mission coordinated by ZIM-CDC. During its two-week stay, the visiting team aimed to review Zimbabwe’s public health laboratory system operations at the national and local levels, make recommendations to strengthen the laboratory system, and propose a plan-of-action to develop a national microbiology reference lab.

During visits to the Zimbabwe capital, and to the cities of Mutare, Murambinda, Chisumbanji, and others, APHL representatives met with scientists, hospital administrators, and laboratory personnel working to curb the HIV/AIDS epidemic that has devastated the Sub-Saharan African region.

The statistics are grim, but the reality was heartbreaking. The HIV prevalence rate in Zimbabwe is among the highest in the world. Between one quarter and one-third of all adults are infected with the virus. Moreover, Zimbabwe has the highest estimated TB incidence in the world, with more than 500 cases for every 100,000 people per year. In the past decade, life expectancy declined almost a quarter century from 63 to 39 years. In fact, by 2010 more than 35% of all Zimbabwe children are expected to be AIDS orphans.
GLOBAL HEALTH

During a tour of the district laboratory at the Murambinda Mission Hospital (one of the district hospitals in Manicaland), team members spoke with Dr. Miller, a Scottish physician posted there. She reported that between 80% and 90% of the out-patients who seek care at the facility suffer from ailments related to HIV/AIDS, while half or more of the in-patients do. Dr. Miller noted that the hospital supports a home-based care program called “Danina,” or “unconditional love.” Hospital resources, however, are meager, and antibiotics and other medications may or may not be available from one day to the next. Because government medical stores are often exhausted, the Murambinda Hospital frequently turns to the private sector to purchase drugs.

The HIV/AIDS epidemic has impacted every socioeconomic group in Zimbabwe. In fact, Dr. Miller reported that the chief medical laboratory scientist at Murambinda Mission Hospital died of AIDS. She added that the hospital employs many parents who have lost spouses to AIDS, and that they often come to work late because they are struggling to balance work and parenting.

APHL plans to provide ongoing assistance to strengthen Zimbabwe laboratories. In late October, APHL representatives will travel again to the country; this time focusing on quality assurance activities, including the development of standard operating procedures for the laboratory system.

Global Health Program Update

Renewal of GAP-APHL cooperative agreement: APHL was awarded a second year of funding for Global AIDS Program activities under its cooperative agreement with the CDC. In this coming year, APHL expects not only to continue work in Zimbabwe, Botswana, India and Cote d’Ivoire, but also to explore opportunities to initiate additional regional laboratory training activities in other countries. In addition to assessments of national and peripheral public health laboratories, APHL members and staff will provide US-based and in-country training in HIV methodologies, tuberculosis diagnosis, quality assurance, and laboratory management.

Members that are interested and able to travel abroad to provide technical assistance or are interested in hosting scientists in their own laboratories should contact Bhavna Lall at blall@aphl.org or Kajari Shah at kshah@aphl.org. For those who have already volunteered services, don’t worry. We haven’t forgotten you, and will be calling on you in the coming year to further your participation in global AIDS activities at APHL.

Laboratory presentations at APHA Annual Meeting: The APHL Global Health Program made two oral presentations at the annual American Public Health Association meeting in Atlanta in October. These were: 1) “Upgrading Public Health Laboratory Capacity in Central American and Caribbean Nations Following Hurricanes Mitch and George: A Partnership Between Public Health Laboratories and Epidemiologists” and, 2) “State public health laboratory partnership for HIV testing in Africa and India.”

Abstracts of these presentations or any further details can be obtained by contacting the Global Health Program at APHL.

Global TB activities:

EQA Document for High Burden TB Countries In early November, an international panel with representatives from APHL, CDC, the World Health Organization, the International Union Against Tuberculosis and Lung Disease (IUATLD), and other groups will present at the IUATLD World Conference the paper “External Quality Assessment (EQA) for AFB Smear Microscopy.”

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Infectious Diseases

Smallpox Vaccine

The Advisory Committee on Immunization Practices (ACIP) released new guidelines on the use of vaccinia (smallpox) vaccine this past summer. They are published in the June 22 issue of Morbidity and Mortality Weekly Report (Vol. 50, No. RR-10), accessible online at www.cdc.gov/mmwr/preview/mmwrhtml/rr5010a1.htm.

The updated recommendations replace previous ACIP guidelines on vaccinia (MMWR 1991, Vol. 40, No. RR-14) and include information about the non-emergency use of the vaccine by laboratory and health-care workers who may be occupationally exposed to vaccinia virus, recombinant vaccinia viruses, and other Orthopoxviruses that can infect humans. In addition, the report contains timely recommendations for the use of vaccinia vaccine in the event that smallpox virus is used as an agent of biological terrorism or a smallpox outbreak occurs for other unforeseen reasons.

Salmonella Serotyping Listserv

The National Salmonella Reference Laboratory, in the Foodborne and Diarrheal Diseases Branch of CDC’s National Center on Infectious Diseases, has recently created a listserv, or informal electronic discussion venue, for those involved in Salmonella serotyping. Using the listserv, named Salm-USA, the Laboratory hopes to speed the dissemination of general information, concerns, and trends in the identification and serotyping of Salmonella.

Public health laboratories are encouraged to join the listserv, which will be unmoderated; that is the comments from any one person will automatically be sent to every member in the group with no censoring.

To subscribe to the Salm-USA Listserv group, send an e-mail to Listserv@cdc.gov, with the words “subscribe Salm-USA” in the body of the message. To send a message to all members of the group, address your message to Salm-USA@Listserv.cdc.gov.

If you have questions about the listserv or how to subscribe, contact Linda Gheesling at the CDC at (404) 639-1218 or LLG1@cdc.gov.

New CLIA Database

A new database containing commercial in vitro test systems (categorized by the Food and Drug Administration since January 31, 2000, and categorized by the CDC before then) is now available at www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfCLIA/search.cfm. Records can be searched by test system name, specialty/subspecialty, analyte, document number, qualifier, effective date, and complexity. Tests are categorized as defined by the Clinical Laboratory Improvement Amendments (CLIA) of 1988. The database will be updated on a monthly basis.

FDA Antibiotic Resistance Web Page Debuts

The FDA has just launched a web page bringing together sources of information on antibiotic resistance. Check it out at www.fda.gov/oc/opacom/hottopics/anti_resist.html.

CAP Article On Clinical Microbiology’s Role In DNA Sequencing

The August 2001 newsletter of the College of American Pathologists (CAP) featured a cover story on DNA sequencing and the analytic power of microarrays in the diagnostic laboratory. William Check, the article’s author, writes that “many observers predict that sequencing will play a major role in clinical microbiology laboratories, such as in detecting resistance mutations in viruses and bacteria, especially as more-automated instruments become available.” The story is available online at www.cap.org/html/publications/coverstory.html.
**NLTN News**

**Bioterrorism Distance Learning Module**

Now available from the South Central National Laboratory Training Network (NLTN) Office is the Workshop in a Box entitled, “Laboratory Readiness for Bioterrorism.” This four-hour module, designed for the Level A Laboratory, was originally presented on-site at eight locations around the United States in Fall, 1999. The presentations are included on two CDC-produced videotapes which are integrated into this distance learning module. It includes an overview of bioterrorism, the role of the FBI, detailed descriptions of the most likely agents of a biological attack and their clinical presentations, safety issues, and the role of the Laboratory Response Network. After viewing the videotapes, the students work through case studies which guide them into discussions about their own facilities' emergency response plan. The module also contains listings of every state's public health laboratory contact, as well as contact information for state FBI offices.

This module was piloted as a joint effort of the Louisiana Office of Public Health, Division of Laboratories, and the National Laboratory Training Network in New Orleans, LA. The Louisiana State Training Coordinator, Meera Parab, facilitated the distribution of announcements to all area hospitals, as well as to public health laboratory personnel. Of the 72 participants in this workshop, approximately half were from the Louisiana Public Health Laboratory, which hosted the workshop. The remaining participants represented 15 different hospitals and major medical centers in the New Orleans area. During the workshop, Dr. Henry Bradford, Louisiana Public Health Laboratory Director, was introduced and provided the participants with relevant contact information. The break period provided a rare opportunity for the public health personnel to network with members of the clinical laboratory community. Results from the course evaluation indicated that many of the participants from the Level A laboratories did not have standard operating procedures to deal with suspected bio-threat agents. As a follow-up to the course, the NLTN Office has been contacted to provide assistance and training to some of the course participants who are in the process of drafting their own bioterrorism preparedness plans. Anyone who is interested in this bioterrorism distance learning module may contact the South Central Office at scoffice@nlttn.org.

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**Genetics for the Public's Health** will be presented via satellite on Tuesday, November 6, 2001, from 1:00 to 4:00 pm EST. Distinguished faculty from the CDC; the Wadsworth Center, New York State Department of Health; private industry; and prominent academic medical centers will discuss the use of new genetic tests in medical management and public health decision-making. Learn how your personal and professional life will be affected by today's research discoveries as information derived from the human genome is integrated into clinical and public health practice. Continuing education credit will be offered based on 3 hours of instruction. A registration fee is not required. For more information contact the National Laboratory Training Network at 615-262-6315. To view/print a brochure and registration form or to register online access www.phppo.cdc.gov/nlttn/pdf/2001/gtph.pdf.
### Newborn Screening Symposium - Collection, Reporting and Follow-up

This past Spring, the state of Georgia and the National Laboratory Training Network co-sponsored a series of newborn screening programs: “Newborn Screening Symposium - Collection, Reporting and Follow-up.” The impact of these courses—measured by evaluating the number of submitted newborn screening specimens which were unacceptable both before and after the course—was significant, as shown in Table 1 below.

The course was designed for individuals who actually collect specimens for newborn screening. During the course, participants learned about specimen collection, proper completion of required paperwork for timely follow-up activities, and the significance of timing in the screening process.

Due to the amount of staff turnover often found in hospitals and birthing centers and the significant degree of impact training has been shown to have, the course will likely be repeated on an ongoing basis.

This same course has been offered in Tennessee.

### Table 1: Unacceptable Specimens

<table>
<thead>
<tr>
<th>GP HL Data</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>Workshops Held</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
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<tr>
<td># Rejected</td>
<td>1,898</td>
<td>2,571</td>
<td>2,100</td>
<td></td>
<td>925</td>
<td>896</td>
<td>605</td>
</tr>
<tr>
<td>% Rejected</td>
<td>11.3</td>
<td>16.3</td>
<td>13.9</td>
<td></td>
<td>5.7</td>
<td>5.5</td>
<td>3.9</td>
</tr>
</tbody>
</table>

The paper was developed by a group of experts based on published literature, as well as experiences in a number of countries and a variety of settings. It aims to provide comprehensive guidelines to establish or enhance an EQA program for the standard Ziel-Neelsen method for smear microscopy and to implement remedial action to correct problems as part of overall quality improvement efforts. A final published document available in English, Spanish and French is expected in Spring 2002.

AFB Smear Microscopy Training Products in Russian

APHL, in concert with CDC and WHO-Moscow, is in the process of translating the AFB Smear Microscopy Training Product into Russian for distribution to tuberculosis laboratories in Russia and other former Soviet states. This product, already available in English, French, and Spanish, has been distributed and well-received throughout Central America, India, and numerous countries in Sub-Saharan Africa. The final Russian product will be available by March 2002.
LABORATORY INFORMATION SYSTEMS

ARCHITECTURE FOR THE NEDSS BASE SYSTEM

ACRONYMS:  CDM (Core Demographic Module), NNDM (Nationally Notifiable Disease Module), Workups (synonymous with Case Workup), IDR (Integrated Data Repository); ANSI (American National Standards Institute); SQL (Structured Query Language), JDBC (Java Data Base Connectivity), LDAP (Lightweight Directory Access Protocol), HL7 (Health Level Seven), XML (Extensible Markup language)

NEDSS: Changing the Way We Do Business

Take a minute to learn about CDC’s National Electronic Disease Surveillance System (NEDSS). It will eventually change the way you approach routine disease surveillance activities.

NEDSS’ goal is decidedly ambitious: nothing short of a drastic improvement in public health surveillance, attained by capitalizing on new-age information technologies.

NEDSS itself is neither hardware nor software, but a set of standards that provides a common approach to the storage and exchange of disease surveillance data. In and of themselves, the NEDSS standards do not represent a complete solution to the problems of data fragmentation. Rather, they are a blueprint from which standardized—and therefore interoperable—solutions can be designed by state health departments (SHDs) themselves.

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However, because the CDC recognizes that not all SHDs are at comparable levels of information technology development, and therefore not all are equipped to develop all of the software needed to implement NEDSS, a basic NEDSS software package has already been written.

**NEDSS Base System**

The NEDSS Base System is software. It was developed by the Computer Sciences Corporation under contract to the CDC. While the Base System can be used in its entirety, SHDs may opt to use only selected portions of the system or none at all, depending on individual state needs. It is now being piloted in Nebraska and Tennessee, with a wider beta release tentatively expected in winter, 2002.

Diagrammed in Figure 1, the Base System has three major components: 1) an integrated data repository (IDR), 2) functional software modules (NNDM, Workups, et al.), and 3) electronic data interchange (EDI) capabilities.

**Integrated Data Repository** - The core building block is a state-managed integrated data repository or “data store,” composed of data from multiple disease programs (analogous to a merchandise store with different departments). The Base System IDR contains CDC-defined tables that store core demographic data, notifiable disease data, and some electronic laboratory and clinical data. The IDR has two highly desirable features. First, it allows SHDs to share, manage, and analyze data within the health department. Second, it provides a single point of contact to exchange data with external partners, such as clinical providers. On an applied level, the IDR supports the workflow of state activities related to case investigation and evaluation. It provides laboratory and clinical data to various users so that a decision for additional follow-up can be made before the case is designated to a particular disease program. Consider the following example:

**Step 1.** A positive chlamydia test is captured in the IDR.

**Step 2.** The record is flagged and information viewed via web screens.

**Step 3.** Staff contact the laboratory for additional demographic information.

**Step 4.** The record is electronically assigned to the STD program.

**Functional Software Modules** - The Base System software modules are functional units designed to work together in an integrated fashion. The core demographic module (CDM) provides the basic functionality to accumulate and manage demographic data. It also offers registry matching features to identify multiple entries on the same patient. The Nationally Notifiable Disease Module (NNDM) supports the management of core notifiable disease data (replacing NETSS, CDC’s National Electronic Telecommunications Surveillance System). Together, these two modules capture all shareable, core data sets across disease programs. Data that is specific to a particular (categorical) disease program is managed by the Program Area Module (PAM).
LABORATORY INFORMATION SYSTEMS

Finally, the Workups Module accommodates a case workup; that is, an accumulation of collected observations, notifications, interventions, and referrals made by a public health worker on a given individual for one or more conditions.

Electronic Data Interchange - The Base System includes software to enable electronic exchange of laboratory findings data, and will eventually support the electronic exchange and reporting of clinical and epidemiological data as well. Specifically, the Base System software facilitates electronic receipt of laboratory results from CDC laboratories and, if selected as an option by a state, the routing of laboratory data from national laboratories to state health departments. In this case, states can electronically receive and store laboratory information in defined tables in the IDR, information which can then be linked with demographic and notifiable disease data to form an integrated patient profile.

NEDSS and the NEDSS Base System are works in progress. If you are or will be involved with NEDSS, you might like to join the NEDSS Internet Web Board by sending a request to Jason Hall via email at cjhall@cdc.gov.

For more information about NEDSS, the NEDSS Base System or NEDSS-related activities, contact Helen Regnery at hregnery@aphl.org.

NEWS ITEMS:

2001 NEDSS Implementation Grants - Drs. Claire Broome and Bob Pinner announced during a recent NEDSS Partners Conference Call that the awards for 2001 NEDSS funding have been made. Altogether, 50 states, 6 cities and 1 territory have received funding since the beginning of the NEDSS initiative last year. This year, 31 awards were made to jurisdictions competing for funding for new NEDSS activities, and a handful of awards were made to jurisdictions to support ongoing activities that were initially funded in 2000. In all, $10.9 million will go to 36 jurisdictions for new or continuing NEDSS activities. Significantly, of the 36, 20 states will receive funds to implement the NEDSS Base System.

MIS Committee Update - APHL’s Management and Information Systems Committee has formed two subcommittees. The Data Information and Sharing Committee (DISC) will focus on LabNet, CDC surveys, data analysis and reports, ad hoc surveys and surveys of local PHLs. Ming Chan, Chief, Florida Bureau of Laboratories, will serve as chair, and Stacey Banfied-Capers will serve as the primary APHL staff liaison. The Electronic Laboratory Reporting (ELR) Committee will focus on laboratory management systems in general, CDC software (LITS Plus and Epi X), CDC committees, NEDSS, and related projects and partnerships. Will McHugh, Bureau Chief, Ohio Department of Health Laboratory, will chair the committee. Doug Drabkowski and Helen Regnery will serve as APHL staff liaisons.
ANNOUNCEMENTS...

Public Health Series Course, “Laboratory Methods for Detecting Rabies Virus”

The National Laboratory Training Network (NLTN), in conjunction with the Centers for Disease Control and Prevention (CDC) and the Texas Department of Health, is sponsoring a Public Health Series Course, “Laboratory Methods for Detecting Rabies Virus,” which will be a five day, wet workshop that will be held January 7-11, 2002 in San Antonio, Texas. The course is designed for your virology staff.

The application deadline is November 9, 2001. If you are interested in participating please fill out an application. In order to hold the course we need to know if there will be enough participants. For more information please contact the NLTN South Central Office at 504.568.2081 or via email scoffice@nltn.org.

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Minute Readers: We want to hear from you!

The APHL Minute is your newsletter, and we are very eager to highlight happenings in your public health laboratory and your personal career experience, including:

- Significant changes in the physical infrastructure of your state’s public health laboratory system (e.g., opening a new laboratory).
- Case studies of interesting laboratory investigations (e.g., investigations of exotic agents, or agents of terrorism or convincing hoaxes).
- Reports of meetings (e.g., at the FDA, IOM or EPA) at which you represent the APHL.
- Brief vignettes describing procedural and/or other changes in your laboratory since September 11, the impact of policy changes in your state on the public health laboratories, etc.
- Profiles of public health laboratory leaders.
- Anything else of potential interest to your colleagues and peers.

In fact, we are so eager to share your news, that you don’t even have to write the story.

Just contact Kelly Deeb, Membership and Newsletter Coordinator, at (202) 822-5227, ext. 221, or kdeeb@aphl.org, and we will have someone call you back to document your news.

The APHL Minute is your newsletter and we want to hear from you!
**Mark Your Calendars...**

**Future Meetings of Interest**

XIIth International Conference on AIDS and STDs in Africa December 9-13, 2001 will be held in Ouagadougou, Burkina Faso, Africa.

Third International Conference on Emerging Infectious Diseases (ICEID) March 24-27, 2002 will be held in Atlanta, GA

**Call for Abstracts**

This conference brings together public health professionals to encourage the exchange of scientific and public health information on global emerging infectious disease issues. The program will include plenary sessions and symposia with invited speakers, presentations on emerging infections, and oral poster presentations. Major topics include current work on surveillance, epidemiology, research, communication and training, bioterrorism, and prevention and control of emerging infectious diseases, both in the United States and abroad. This meeting is cosponsored by CDC, APHL, ASM, CSTE and WHO.

**Deadline for Abstract Submission is December 7, 2000.**

This is an excellent opportunity for public health laboratories to demonstrate the important role they play in identification, prevention and control of emerging infectious diseases.

Additional information about this important meeting, including registration, hotel, suggested abstract topics and submission requirements can be found at: www.cdc.gov/iceid

**2002 APHL Annual Meeting** June 9-11, 2002 will be held at the Sheraton Old Town Inn in Albuquerque, NM

- Annual Business Meeting
- Sessions and Posters
- Exhibit Hall
- Networking with your Colleagues
- 50th Anniversary Celebration

Please keep your eyes open for future mailings regarding the Annual Meeting. You may also find up-to-date postings on our website at: www.aphl.org
To submit an article for consideration, contact the Newsletter Coordinator: Kelly M. Deeb via email kdeeb@aphl.org