

DC Public Health Laboratory Finds *National, State and Local* Merge in the Heart of the Federal City

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

“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

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

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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.

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

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.

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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-

ular biology, virology and microbiology. “In a 64-year-old building, we will never be able to achieve a BSL-3 lab,” Knuckles said.

In the long-term, city planners are in the process of planning and designing a consolidated laboratory facility that will house the DCPHL, the metropolitan police forensics laboratory and the office of the DC medical examiner. As most things in Washington, DC, Knuckles said, “It’s controversial. The good part is that we’re an integral part of the planning and design process, and this time around, expert laboratory architects will be involved.”

Looking ahead, Knuckles observed, “Our 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.”

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