At the Epicenter of Crises, NYC Laboratory Emerges Stronger Than Ever

**Director**

Sara T. Beatrice, PhD, who holds advanced degrees in medical microbiology and immunology, came to the New York City (NYC) laboratory in the early 1980s when AIDS was a top public health priority. “It was interesting timing,” said Beatrice. “We still didn’t know what caused AIDS and I was coming to the epicenter of the epidemic as a virologist.” Beatrice developed and ran the city’s HIV laboratory until 2001, when she took over the local lab response to a new public health threat: anthrax. Six months later she was asked to head the laboratory as an assistant health commissioner.

**Location**

Midtown Manhattan on First Avenue, a.k.a. hospital row. “We’re across the street from the VA Medical Center and Bellevue—the oldest public hospital in the US—and just down the street from NYU and the United Nations. Whenever public dignitaries come to town they close off First Avenue and it becomes a parking lot for the hospitals.”

**Facility**

The laboratory occupies 8 floors of a 14-story Department of Health building. Other occupants include the Aaron Diamond AIDS Research Center and the NYU medical research laboratories. The city laboratory is “overcrowded and needs updating,” but a two-phase renovation is in process and consultants have recommended that an option is to move the laboratory to a new location that may be less expensively customized.

**# Staff**

About 255 positions.

**Relationship to the State Lab**

A municipal laboratory governed by NYC regulations and funded with city and state dollars, supplemented by federal grants. “The mayor is my boss, but we try to make sure that our systems run parallel to our partners’ (systems) at the state level.” The laboratory has a relationship with state laboratories in Hartford, CT, and Trenton, NJ, for surge testing, as both are nearer than the NY state laboratory in Albany.

**Distinguishing Characteristics**

- First municipal public health laboratory in the US (established in 1892).
- Chemistry laboratory has been operating continuously since 1869.
- Pilot laboratory for a number of homeland security projects, including Biowatch.
- Developed the national interpretive criteria for HIV Western Blot testing within the lab.
- Home to what is probably the largest HIV-2 and HIV-1 variant testing program in the country.
- First US laboratory to “be hit with” West Nile virus. “We’re actually a port city, although I don’t know that people think of us that way.”

**Highest Volume Testing**

The laboratory tests roughly four hundred blood samples every day for lead followed closely by HIV and STD tests for gonorrhea and chlamydia.

**Notable Success Stories**

Establishing a strong biothreat response program. NYC established brand new Biosafety Level 2 and Biosafety Level 3 laboratory suites for bioterrorism and TB work. “We were able to bring in leading scientists to not only maintain the CDC’s LRN protocols but to work with top scientists around the country... to evaluate more comprehensive, probably less expensive, multiplexing assays that may eventually replace the current LRN protocols.” The city laboratory also instituted a training unit to work with sentinel laboratories in hospitals and other clinical settings to beef up the city’s disease surveillance capabilities and, with NYC’s 40,000 or so police officers, tens of thousands of fire fighters and various other HAZMAT groups, to ensure uniform sample collection and the speedy involvement of the public health laboratory whenever crises arise. “They all understand what our protocols are, what we’re all about, and how to reach us. The training unit has done a phenomenal job.” Finally, the laboratory has cross-trained a large number of its own scientists so that they can take on new emergency response roles should the need arise.

Re-establishing a clinical virology laboratory. “In the early 80s we had to close our virology laboratory so the resources could be used on the HIV epidemic. But we felt it was very important in the age of monkeypox, SARS, West Nile virus, avian flu and maybe smallpox to re-establish that capacity and to take on a leadership role in the community.”

**Biggest Challenge**

Staffing. “This is more of a crisis than a challenge. We lost 40 people in the last three years who are not being replaced. Now we’re going through yet another round of retirements. Our salaries are not necessarily competitive with the private sector, and we have a residency requirement so people have to live in the city. NYC is a great place to live; it’s just very expensive. Having trained clinical biologists and trained chemists who understand public health and are willing to work for public sector salaries is a huge challenge.”

**# Vacancies**

At least 25 approved vacancies and counting.

**Goals**

Develop a bureau-wide laboratory information system. The laboratory invested two years in bringing LITS Plus online before the CDC stopped funding the software. Then the laboratory turned to a private vendor—one of only two to respond to an RFP—and is currently testing the resulting new software in the lead laboratory.

Complete Phase II of the ongoing renovation project, which will revamp the underlying bones of the laboratory: HVAC systems, water tower, acid tanks, fire alarms, contemporary security, biosafety systems, etc.

Continue to reorganize and evolve services, staffing and facilities to meet ever-changing public health needs.