

## Public Health Laboratories Ride a Funding Roller Coaster— And It's Dangerous

Scott J. Becker

Association of Public Health Laboratories, Silver Spring, Maryland

This year has been a roller coaster for the nation, especially for those of us in biosafety-related fields. At public health laboratories—the institutions charged with detecting and controlling diseases and other health threats—we've rolled and pitched through a major event, the novel H1N1 outbreak, and we know this crisis isn't over yet. Yet it's already obvious that we're riding another cycle of health crisis followed by "fix-it-quick" policy. Even in the best of times, this recurring cycle never comes close to solving the systemic problems that challenge public health laboratories.

The irony is that while America depends on our work, we can't depend on our funding.

When we started 2009, we had hopes that public health labs might benefit from federal measures to boost the economy. But the stimulus package didn't stimulate us. Then came novel H1N1. Lab workers, some called back from furloughs, worked 7 days a week accessioning, preparing, and testing specimens and then reporting test results.

Within weeks of the initial outbreak, 65 local and state public health laboratories were able to begin conducting confirmatory testing. This meant more work for our already overworked labs but greater safety for the public, thanks to the strong network built among the labs and the CDC ("Public Health Laboratories to Assume Primary Responsibility for Confirmatory Testing of Swine Flu," APHL, April 30, 2009).

But meanwhile, back at the labs, staff was dealing with issues stemming from chronic under-funding:

- One lab, ready with trained staff and the right platform to perform the CDC's five-target influenza assay, started testing—and the only instrument capable of running the tests promptly broke.
- Another lab had to perform manual testing while it waited for a software upgrade.
- Labs were training flu staff in the midst of the surge.
- Half a dozen public health labs did not have the required ABI 7500 FAST platform—and no way to acquire one. The reason? Budget constraints.
- Some labs were sending results to the CDC by fax.

In addition to H1N1 response activities, public health laboratories had to fulfill all their usual duties, from newborn screening to food-borne outbreak testing.

(One such outbreak hit during the worst of the spring H1N1 crisis.)

What was the nation's response? \$1.5 billion in emergency funding through a supplemental appropriation (Letter from the President on Supplemental Appropriations Act, 2009 [Public Law 111-32]). Yes, this funding was urgently needed, and \$1.5 billion is a hefty sum. But so far it appears the nation's labs will receive no more than \$20 million of this.

As those in the biosafety field know, rushing and overtaxing labs can compromise worker safety. During the height of the H1N1 crisis, many worked 12- and 16-hour shifts for days. When not enough employees were available to rotate through, some labs brought in temporary workers, training them on the fly. It was a heroic effort, and it succeeded, but it's not one we want to have to try again.

Professional organizations carry the responsibility for setting standards, credentialing, and certifications in the areas of biosafety and biosecurity, but it's those at the laboratory bench who pay the freight, in time and money, for the training needed to meet them. While the Association of Public Health Laboratories (APHL) is working to develop systems assessments, offer more training, and extend resources and partnerships to make the labs safe and high-quality, we can stretch our capacities only so far. For instance, we are currently working on distance modalities for training because travel budgets are strapped. But some instruction must be done hands-on.

Maintaining the physical infrastructure of our labs matters, of course. Add to this the challenge of keeping up with fast-changing technology, and you're looking at several lines converging on the risk chart.

One of the most serious holes in our infrastructure is in reporting—public health labs simply do not have the rapid reporting systems needed to respond effectively in a surge event. Most submit test results using outmoded, labor-intensive methods: e-mail, fax, phone, and the CDC's DOS-based system. Doctors and health decision makers rely on laboratory data to determine patient treatment and disease control measures, so any delay in delivery of lab data is detrimental to public health.

Laboratories are preventive health institutions. Electronic reporting expedites delivery of treatment and pub-

lic health response by accelerating delivery of data to decision makers. If the data lag, so does the intervention.

To address this urgent need to communicate with the CDC, APHL's Public Health Laboratory Interoperability Project (PHLIP) aims to create a nationwide system for electronic exchange of lab data. Currently, through this CDC-supported project, five state labs can report test results electronically to the CDC, and more states are developing this capability. But sustained funding would get more labs on board faster.

A third rising area of risk is the overall lab workforce shortage. Getting more people into the profession is something both APHL and ABSA are working toward. Yet this, also, depends on sustained funding. If the jobs aren't there or the jobs don't pay, our encouragement won't make a difference. No offense to plastic surgeons, but one can't blame students for finding working with Botox more fiscally appealing, as it stands now, than working with anthrax when they contemplate their futures in science and medicine.

Those in biosafety know that you can't plan for threats that aren't yet known, and you can't prepare for

every threat. All we can do is have the best systems in place to meet threats when they get here, based on what we've learned from past events.

Preparedness starts well in advance of a crisis. For laboratorians, it's not simply performing a drill or an exercise. Preparedness means staffing, training, and improving essential infrastructure. We experienced what being prepared was like early in this decade, when funding was available to meet biological and chemical threats. We're still benefiting from the forward strides we made then—in creating partnerships, in renovating crumbling labs nationwide, in advancing our knowledge base.

Continuing on the crisis-funding roller coaster ignores the realities of the world in which we operate and the lessons we've learned. It's a short-sighted approach with which anyone in science and medicine would take issue. As we in the labs know, safety starts with prevention, and it's far better to avert a crisis than to respond to one. Let's stop leveraging the crisis du jour and commit to steady funding of our laboratory first responders, the nation's public health laboratories.

### **WHO Guidance Document—Updated and Revised**

The WHO has provided an updated and revised guidance document entitled "Laboratory Biorisk Management for Laboratories Handling Human Specimens Suspected or Confirmed to Contain Influenza A (H1N1) Causing the Current International Epidemics" as of November 30, 2009. This document is available on the web and has been posted at: [www.who.int/csr/resources/publications/swineflu/LaboratoryHumanspecimensinfluenza/en/index.html](http://www.who.int/csr/resources/publications/swineflu/LaboratoryHumanspecimensinfluenza/en/index.html)

### **Responsible Research with Biological Select Agents and Toxins**

*Responsible Research with Biological Select Agents and Toxins* makes recommendations on the appropriate security measures for laboratories that conduct research using biological select agents and toxins (BSAT), a list of more than 80 dangerous pathogens that pose extreme public health and security risks. The report from the National Research Council (NRC) addresses both physical security and personnel reliability measures developed to protect against external and internal threats and focuses on those policies and practices that will be most effective and that minimize unintended consequences on the ability to conduct vital scientific research on BSAT. Available at: [www.nap.edu/catalog.php?record\\_id=12774#](http://www.nap.edu/catalog.php?record_id=12774#)