LAB MATTERS

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Summer 2026 Issue 2

Beyond the Data:

The Science of Storytelling

Strategies for telling public health stories of impact

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26 Advancing Public Health Through Metagenomics: Kenya's Collaborative Success Story

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The Association of Public Health Laboratories (APHL) works to strengthen laboratory systems serving the public's health in the US and globally. APHL's member laboratories protect the public's health by monitoring and detecting infectious and foodborne diseases, environmental contaminants, terrorist agents, genetic disorders in newborns and other diverse health threats.

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President's and CEO's Q&A: Looking Back, Looking Forward

As part of APHL 2026, I had the opportunity to sit down with APHL CEO Scott Becker, APHL president and director of the North Carolina State Laboratory of Public Health Dr. Scott Shone, and APHL president-elect and public health laboratory director of the Alabama Department of Health Bureau of Clinical Laboratories Dr. Sharon Massingale for a wide-ranging conversation about APHL's anniversary, the journeys that brought us to this moment and the future of public health. Below is an excerpt adapted from that conversation, but you can listen to the full podcast on Lab Culture News.

*— **Gynene Sullivan**, manager, Communications*

Sharon Massingale, PhD
President-elect, APHL

Gynene Sullivan: In Dr. Sharfstein's keynote on Monday, he talked about the changing rules of public health action. How can public health laboratories, especially how different and how similar public health laboratories really are, and APHL for that matter, help our members adapt and continue to thrive with all of the challenges that are coming forward?

Sharon Massingale: So, I'll start. You asked what I will be talking about in my address this afternoon. We heard about the white paper on Monday in the laboratory's directors' meeting, and they offered some challenges that we're going to have to think outside of the box to solve. But prior to that, I had thought about how we can improve the part of the strategic plan that talks about filling the gaps. How can we form coalitions better? We know we have our [Southeast Regional Consortia] SEC. And so, one of the things that come to my mind is something I think is very simple and I think I would like for us to do. We had this concept of laboratory improvement systems, and somebody brought it up today and I said, okay, this is continuously being brought to my mind. How can we utilize that and analyze processes within the region and come together for emergencies? You know, we think about it and make it work because we're resilient people. But what if we already had that done? And how can we do that? Why not within the realms of modifying that template and utilizing it in the regional consortia? So, I'm going to suggest and propose we do that and make our region the beta test so that we can be able to move forward to make us more cohesive within our regions. And I feel that we don't have to utilize the whole tool, but there are certain tenets of it that I think we can utilize to help make that a reality.

Scott Becker: I used to, years ago, shy away from the "R" word…the regionalization. I look at it very differently today, because it's really a mutual compact of assistance and support. I think as we've seen in this last year, perhaps there will be a reduction in the ability of the federal government to bring things together. The truth is, APHL does that, regions do that, neighboring states and localities do that. I think there's also a movement across the country in public health of consortia building. And I believe APHL was at the forefront years and years ago, because we've had our consortia for many years. I think we are looking at it with new eyes. And that's a really important thing right now. I've said this before: through chaos, comes opportunity. And I think we're getting to the point of

Scott Becker, MS
CEO, APHL

being able to think a little bit more clearly and strategically and going back to Scott's point about our strategic map. That's been something that's a guiding post. It's a strategic map for two years to get us through whatever period we happen to be in. But I can also see a lot of action down the road. I may not have been able to say that a year ago, but things are getting a little bit clearer and certainly the regional consortia is I think going to be a highlight of the future.

Scott Shone: Sitting here last year in May, it's almost surreal to think the meeting was incredibly well timed to address where we were and what we felt at the moment. I think our members came out of that a little more energized. And I kind of feel like we're lucky that the 75th wasn't last year, because it would have been hard to celebrate in May 2025. We weren't in that place. And I think now we can celebrate, but we also have that opportunity to think about these shifted dynamics. You mentioned that the rules of the game have changed. I think the rules haven't only changed about laboratory science, but how we communicate and how we talk about who we are and explain. And I mean, it goes back again to telling our stories that how we used to say how we're successful is not how we should say it now or even who should say it. It might not be that I'm the best messenger for everything, but then it's my job to figure out who should say it. And I think that's been part

Scott Shone, PhD
President, APHL

of the other success across the different disciplines. But yeah, I mean, there are a lot of lessons learned. I think coming from Brian Castrucci's keynote last year, which was very well timed to Josh talking about this changing of the rules is this flow that we're in down this river of change.

Becker: And I think the commonality is that we have a voice and we need to use it because we know what we're doing, and we know who can support and what the needs are.

Shone: Well, in the prior strategic map, there was a box that said use the elevated voice of APHL. That was in the pandemic because APHL was a force as part of this response. We don't have that box in the current strategic map, but it's not because we don't have an elevated voice, as you just said. It's just elevated in different rooms. And that's where we have to figure out how to create doors between the rooms where our voice is elevated to a room where it might not be as loud but then let it echo through.

Massingale: And I want to add on; you said the words success and celebrate. Scott and I are part of the Southeast Regional Consortia, the SEC, and I would like to say today that we have a reason to celebrate our success in that all states are signing off on our MOU, which has been an issue for some. We had one state that was holding out, I think two weeks ago we got that state, so now we are all signing and I think that's the reason that we can celebrate in is moving towards this regionalization and a mutual agreement that we can support each other. So, I'm really happy and excited about that. ■

In Their Own Words: Fellows Connect with Communities Through the Public Health Laboratory Ambassadors Program

Facilitated by **Hailey Reiss**, specialist, Academic Partnerships and **Ashley Smith**, lead specialist, Fellowships and Internships

Kate Namey and Krithik Duraisamy are both active Public Health Laboratory Ambassadors who had the pleasure of participating in the program while completing their fellowships. Here, they share their stories of how their experiences in both programs have impacted them.

What drew you to public health?

Kate Namey

Kate Namey, CHES®, biological threats defense trainer, Florida Bureau of Public Health Laboratories-Jacksonville:

Public health gives us the ability to help many people before a problem or disease occurs. Programs like infectious disease surveillance are incredible because they are minimally invasive but provide an insight into what is happening in our community so that we can help keep people safe and healthy.

Krithik Duraisamy

Krithik Duraisamy, fellow, Arizona State Public Health Laboratory:

I have a lot of family members who I look up to who were and are currently working in the civil services. I also gravitated towards public health in college right after the pandemic, since I had an interest in the life sciences, informatics and data science. I saw the potential to apply my interests and make a meaningful impact within public health. Additionally, I believe this field can mitigate a substantial amount of pain and suffering through surveillance and prevention efforts.

Why did you decide to become a Public Health Laboratory Ambassador?

Duraisamy: I was asked to become an Ambassador after my second time tabling at a career fair. I liked the idea of becoming an Ambassador because a career specialist reached out to me on Handshake and suggested I apply to the fellowship program after I had finished college. This felt like a great opportunity to pay it forward and guide current students to the Public Health Laboratory Fellowship Program.

Namey: I decided to become an Ambassador because I was already involved in outreach as part of my fellowship project and this program has allowed me access to other professionals that are doing similar work who can provide valuable insight as to how I could be doing this better.

How does being a fellow inform your activities as an Ambassador?

Duraisamy: I talk about my experience with my mentor and the informatics projects I'm working on to the people I meet at events. Talking about the projects I'm working on can be informative for students who may not be aware of how their interests can be applied to the field of public health.

For more information on the Public Health Laboratory Ambassadors program, visit **our website**. You can also contact **academic.partnerships@aphl.org** for more information on how current fellows can participate in the program.

Namey: I have the ability to travel, speak and present with the support of both APHL and my host laboratory. Especially when speaking to students, it is really helpful to be able to represent both aspects of public health: as a person that is still learning and developing my own skills and from the perspective of knowing how many vastly different career opportunities there are within the laboratory system.

What is your favorite part of being a Public Health Laboratory Ambassador?

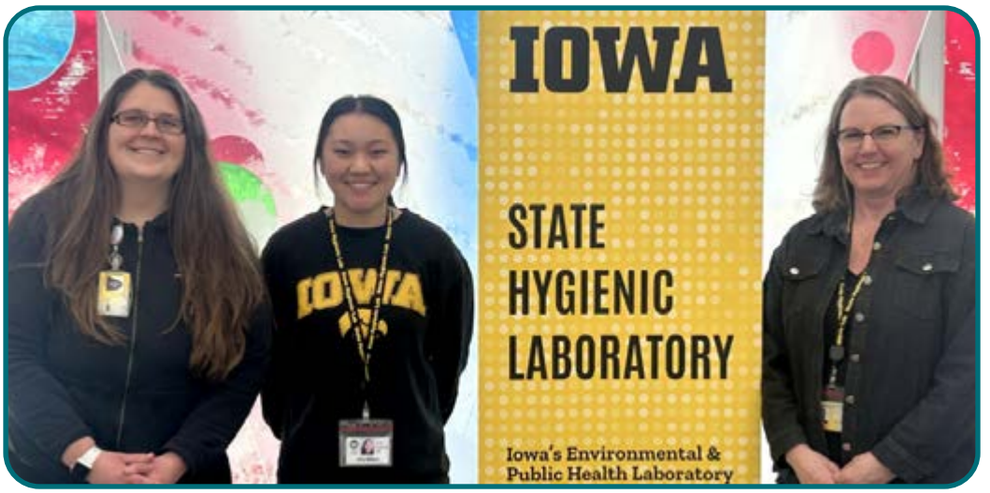
Namey: I really enjoy learning from others during our Ambassadors Connect calls. There are always so many creative and unique suggestions and it is so helpful to learn from those that have already done things so that I can learn from their mistakes (and successes).

Duraisamy: My favorite part of being an Ambassador is when the people I'm talking to genuinely appreciate the information I provide. Even if they decide not to apply to the fellowship program, the resources I provide can still be useful for them down the road if they ever want to work in public health or in the civil services. ■

The views expressed in this article are reflective of the authors themselves and not the organizations they represent.

Internship Proves to be Fast Track to Employment for Iowa Graduate

By **Rudolph Nowak**, MPH, senior specialist, Marketing and Communications



(from left) Mentor and Support Services Supervisor Haley Peden, Fellow Amy Millard, and Mentor and Support Services Director Sherri Marine. Photo: State Hygienic Laboratory at the University of Iowa

Fellowships aren't the only pathway to employment through the Career Pathways in Public Health Laboratory Science: An APHL-CDC Initiative. Internships can prove to be a fast track to the laboratory workforce as well.

A recent example is Amy Millard who was a student at the University of Iowa studying chemistry and criminology. She was looking to start her last semester in June 2025 when she saw the Career Pathways in Public Health Laboratory Science Internship Program listed on Handshake, the university's job board. Millard didn't realize that the process for applying for the internship would ultimately land her a job at the State Hygienic Laboratory at the University of Iowa.

"I just graduated this past December and I was doing the internship. I started last June, during my senior year and it got extended all the way through December. I was able to start right after graduation," Millard said.

While her area of study was chemistry, Millard's internship was concentrated on the courier system for the laboratory.

"The laboratory brings in shipments from 99 counties and [the internship] was looking at making the system more efficient, reducing costs and seeing which clients use the system most often," Millard said.

She added that while it was different and not necessarily using her chemistry background, the internship offered a way to see the whole scope of the laboratory.

"I got to present findings to different managers and people running the laboratory. We brainstormed solutions using the data I was able to collect from shipping logs. It was tedious, but it was fun to see the laboratory in that way," Millard said.

Transition Period

During her internship, Millard's mentors gave her the opportunity to shadow scientists in the laboratory.

"It was there that someone put it in my ear that some positions might be coming open in the next few months," she said. "So I thought I might as well throw my name in. My mentors, Sherry Marine and Haley Peden, were references for me in that application process. It was great to have their support."

While she does not work with her mentors anymore, she appreciates the encouragement and support they offered when she applied for the position. Millard's internship was separate from most staff and her main contacts were her mentors. Her shadowing in the laboratory departments gave her the only exposure to the laboratory staff.

"You see people, especially people you job shadowed, and it's really fun to meet them again and now actually work with them," Millard said.

Adjusting to the New Role

Millard is now an environmental laboratory analyst in the radiochemistry department of the Iowa laboratory.

"It's exciting for me since chemistry is my passion. Shifting towards that is exciting and fun," Millard said.

Her laboratory tests environmental and food samples for contaminants and different isotopes that might be negatively impacting water in surrounding areas.

"The US Food and Drug Administration has a program where they constantly have food shipped to our laboratory and we're one of the sites that does the food testing. For example, right now we're testing lunch meat for contaminants," Millard said.

Millard added that around the time of the Super Bowl, the laboratory received food samples from the concession stands that would be sold at the game.

The radiochemistry laboratory will be a challenge since Millard said that subject was not talked about during her undergraduate studies. While she says she is still adjusting to her new role, she said the laboratory promotes a radiochemistry certificate program.

"The program is through (The University of) Iowa and it is three semesters. I'll definitely be interested in that," Millard said.

"I have a lot to learn, but it's still exciting and I still feel I can contribute. I also come with all the shipping knowledge and courier information. It is fun to be at the forefront of that. Now I'm the one doing these tests for these clients. So, it's exciting." ■

Developing Leaders, Strengthening Laboratories: The Impact of APHL's Leadership Development Programs

By **Kenlie Fite**, DrPH, MPH, CPCLC, lead specialist, Leadership and **Kathleen Street**, MS, PMP, CMLF, senior manager, Leadership

Emerging Leader Program Cohort 19 virtual and hybrid participants.

Developing strong leaders is essential to the success and resilience of public health laboratories. Across the United States and globally, laboratory professionals are navigating increasing complexity, evolving public health priorities and expanding expectations for collaboration and communication. Through its leadership development programs, APHL supports professionals at multiple career stages while strengthening long-term connections across the laboratory community.

One cornerstone of this effort is the Emerging Leader Program (ELP), which is delivered through hybrid and virtual formats. Designed for professionals who are building foundational leadership skills and expanding their influence within teams, projects and programs, ELP groups participants into a cohort with structured learning experiences that combine leadership concepts with practical application. Cohorts engage in sessions customized to address cohort-identified needs. Sessions focus on communication, decision making, psychological safety, time management, collaboration and execution—topics that reflect real challenges faced by laboratory professionals as they balance technical expertise with growing leadership responsibilities. Participants benefit from peer learning, structured reflection and coaching opportunities from program alumni that help translate insight into action. Equally important, they build relationships that extend beyond the formal program experience and support ongoing collaboration across disciplines. The 20th ELP cohort graduated in May 2026.

Complementing this work is Laboratory Leaders of Today (LLOT), which supports new laboratory directors as well as assistant and deputy directors as they navigate complex leadership roles. Presently, laboratories without staff new to these roles may select a senior staff member to participate, if organizations project they may rise to these roles. These leaders often step into positions that require systems thinking, strategic decision making, workforce development and coordination across multiple partners. LLOT provides a space for participants to explore leadership challenges with peers who share similar responsibilities while strengthening confidence in their leadership approach. The third cohort of LLOT graduates in October 2026.

Together, ELP and LLOT support a continuum of leadership development that reflects the evolving needs of the public health laboratory workforce. Early-career leaders gain tools to grow their influence and effectiveness while experienced leaders strengthen their ability to guide organizations through change. This intentional alignment helps build a stronger leadership pipeline across the public health laboratory system.

Equally impactful are the alumni communities that extend learning beyond each program year. The Emerging Leader Alumni Network (ELAN) and Laboratory Leaders of Today Alumni (LLOTA) create opportunities for continued engagement through networking, mentoring and collaborative problem solving. More than 300 alumni across both programs have an

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Laboratory Leaders of Today Cohort Three.

Engaging Staff at Scale: Wadsworth Center's CARE Steering Committee

By **Aubrey L. Galusha**, PhD, program director, CARE, New York State Department of Health–Wadsworth Center

Wadsworth Center's 2025–2026 CARE Steering Committee. Photo: Wadsworth Center

> **"CARE sets out to really connect the people, not just to each other, but to the public; to connect them with opportunities, to connect them with their career."**
>
> *— Anonymous survey response*

In 2024, the New York State Department of Health-Wadsworth Center launched a new office dedicated to preparing the laboratory workforce for the public health threats of 2030: Community. Advancement. Recruitment. Engagement. (CARE). Since launching, CARE has led numerous workforce-oriented initiatives, including peer learning, employee recognition, leadership development, volunteer opportunities and academic engagement activities.

The critical component to CARE's success is a commitment to enabling staff at all levels to meaningfully contribute to the laboratory. The initiative that most strongly embodies this principle is the CARE Steering Committee, a decision-oriented group designed to engage staff in workforce development and community engagement activities.

Key structural components for Year 1 and Year 2 are shown in the table. The group included representation from all areas of Wadsworth Center, including administration, bench staff, information technology and laboratory operations. The office has full support from executive leadership.

The Steering Committee was designed to support meaningful action by the members with support and advocacy from the central CARE program office. As the Steering Committee matures, the group is self-governed, fostering a dynamic in which staff take full ownership of their activities.

Steering Committee Achievements

Academic Engagement: The Steering Committee initially tested a process for engaging with academic partners in our region and organized five events with broad staff participation. In its second year, the group focused on organizing eight outreach events at local colleges to promote summer experiential learning. The power of recruiting from colleges is exemplified by two Steering Committee members who were recruited to Wadsworth Center through earlier outreach.

Building Connections: The Steering Committee has organized multiple opportunities to volunteer at local community organizations, introduced a Center-wide picnic and brought staff together for lunchtime walks. All Committee activities involve staff from multiple areas. In an organization as widely distributed across distinct locations as Wadsworth Center, these opportunities to connect have been a significant driver of cross-program relational infrastructure.

Professional Development: The Steering Committee launched two new initiatives for professional development: 1) a peer training program that launched with a module on artificial intelligence and 2) "Wadsworth Perspectives," a lunch-and-learn style discussion where staff can learn about career paths. Strong components of staff development are also embedded in academic engagement and a new Committee-led pilot-scale

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Table. Steering Committee structure for Years 1 and 2.

Component	Year 1	Year 2
Starting Members	24	25
Group Structure	5 static groups w/ leads	Flexible w/ points of contact
Committee Leadership	Committee Chair*	Committee Chair* + Vice Chair
Communication	Email	Microsoft Teams channels

**Committee Chair role filled by the CARE Program Director for the initial two years.*

Member Profile: Louisiana Department of Health Bureau of Laboratory Services

By **Richard Tulley**, PhD, ABCC, director, Office of Public Health Laboratory

Year established: The Louisiana Department of Health (LDH) Bureau of Laboratory Services was first established when a chemical laboratory to analyze food, dairy products and beverages was established in 1891. In 1894, Louisiana opened the first bacteriology laboratory in the United States to test for diphtheria, malaria, tuberculosis and typhoid fever.

Location: Our main location in Baton Rouge hosts newborn screening, infectious disease and emerging pathogens, virology and sexually transmitted infections, microbiology and tuberculosis, environmental chemistry and microbiology. A satellite laboratory in Amite hosts safe drinking water microbiology and milk and dairy testing, and satellite laboratories in Alexandria, Lake Charles and Shreveport host safe drinking water microbiology testing.

Number of Staff: Currently, there are 105 staff members.

Distinguishing characteristics: We are a happy and productive laboratory.

Highest volume testing: During COVID-19, nearly 2,000 samples per day.

Notable success story: The laboratory was in New Orleans until 2005, when it was totally destroyed by Hurricane Katrina. After using temporary quarters for several years, the laboratory moved into a new facility in Baton Rouge in 2015. We continue to be accredited by CLIA, EPA, FDA and ISO 17025. We discovered a case of Welder's anthrax for which the patient was saved through those efforts, and we have been designated as a state sponsored "Wellspot," which means that we are one of the organizations in Louisiana that participates in a voluntarily implementation of healthy changes in our lifestyles and environment to help our employees live well and healthy.

Biggest challenge: Finding alternative funding when grants expire. ■

Louisiana Department of Health Bureau of Laboratory Services has been in Baton Rouge since 2015. Photo: LDH Bureau of Laboratory Services.

Lab Week 2026 at the LDH Bureau of Laboratory Services. Photo: LDH Bureau of Laboratory Services.

Davis Covington prepares a McFarland suspension for the modified carbapenem inactivation method (mCIM). Photo: LDH Bureau of Laboratory Services.

Member Profile: South Carolina Department of Environmental Services Laboratory

By **Micheal Mattocks**, assistant bureau chief, Bureau of Regional and Laboratory Services

The current Hayne Laboratory. Photo: SCDES.

A rendering of the new laboratory, slated to open July 2026. Photo: SCDES.

Year Established: The South Carolina Department of Environmental Services (SCDES) Laboratory has a long history through the previous state entities of The South Carolina Board of Health, South Carolina Pollution Control Authority and the merger of these two entities into the Department of Health and Environmental Control (DHEC). The state environmental laboratories for the state of South Carolina, as we know them today, were established between 1972–74. DHEC split July 1, 2024. All environmental laboratory functions now operate within the SCDES.

Location: Columbia, South Carolina

Facility: The facility is currently housed at the Hayne Laboratory. We are close to completing a new laboratory building, which is scheduled to open July 2026. The environmental laboratory will move from the Hayne building to the new laboratory building to be shared with the Department of Health Laboratories. The new laboratory building has not been named.

Number of Staff: 80. The environmental laboratory team is composed of chemists, microbiologists, laboratory certification officers, administrative staff and hourly staff.

Distinguishing Characteristic: The South Carolina environmental laboratory's distinguishing characteristic is the variety of testing and regulatory activities. The laboratory has responsibility for water testing, ambient air monitoring, fish tissue testing, sediment testing, private wells, radiochemistry and laboratory certification. The laboratory truly serves as the central technical and regulatory hub for the Department of Environmental Services.

Highest Volume of Samples: Drinking water samples

Notable Success Story: The environmental laboratory has a rich legacy of providing opportunities to young scientists starting their careers. This is great for local universities and for the state of South Carolina. While some of these staff may leave for other opportunities, working at the state laboratory threaded the needle. We will continue this legacy with the excitement of the opening of the new laboratory facility in July. ■

Dylan Cobb with SCDES's Division of Air Quality Analysis gathers data from one of the agency's stations that monitors for particulate matter. Photo: SCDES.

SCDES Chemist Benjamin Walters prepares samples in the Volatile Organics Laboratory as part of the agency's ongoing work to monitor and protect South Carolina's environmental health. Photo: SCDES.

APHL 2026: Laboratory Science and Public Health Meet in Charm City

Over 1,400 public health scientists and administrators attended APHL 2026 in Baltimore, MD. May 4–7. APHL welcomed over 200 fellows and interns from the Public Health Laboratory Fellowship and Internship Programs: an APHL-CDC Initiative. Joshua Sharfstein, MD, spoke to a standing-room-only audience about making sense of the myriad changes in public health at all levels and, more importantly, what has not changed during the Dr. Katherine Kelley Distinguished Lecture. The Henrietta Lacks family joined the conference for a poignant session on her involuntary contributions to society. And APHL presented its annual awards for outstanding achievements in laboratory science, creative approaches to solving today's public health challenges and exemplary support of laboratories serving the public's health. The following awards were presented:

Lifetime Achievement Award

Recognizes individuals who have established a history of distinguished service to APHL, made significant contributions to the advancement of public health laboratory science or practice, exhibited leadership in the field of public health and/or positively influenced public health policy on a national or global level. This is not a retirement award, but a true Lifetime Achievement Award.

Peter Iwen, director, Nebraska Public Health Laboratory

Gold Standard Award

Given to an APHL member who makes or has made significant contributions to the technical advancement of public health laboratory science and/or practice.

Philip Lee, lead biological defense coordinator, Florida Department of Health Bureau of Public Health Laboratories-Jacksonville

Carol Glaser, public health medical officer, California Department of Health Center for Laboratory Sciences

Silver Award

Honors a laboratorian with 10 to 15 years of service in a Governmental public health laboratory (either Public Health or Environmental/Agricultural laboratory). The honoree will be recognized as a leader both within their home laboratory as well as external to their laboratory.

Eric Bind, manager, Biomonitoring and Exposure Program, New Jersey Department of Health Public Health and Environmental Laboratories

Champion of the Public Health Laboratory Award

Honors federal, state and local elected officials or executive branch employees who have recognized the importance of state and local governmental laboratories that perform test of public health significance either through support of legislation or federal agency decisions.

The Honorable Tom Cole, Congressional representative, Oklahoma's 4th district

Emerging Leader Award

Honors an individual whose leadership has been instrumental in one or more advances in laboratory science, practice, management, policy or education early in their career.

Arnachalam Ramiah, director, Bioinformatics, Georgia Public Health Laboratory

Leadership in Biosafety and Biosecurity Award

Honors a laboratorian with over 10 years of related service in the field of biosafety and biosecurity in a state and/or local public health laboratory. The honoree will be recognized as a leader both within their home laboratory as well as external to their laboratory (for example, by serving in a leadership role in committees/task forces at the national level).

Eric Lundquist, biosafety coordinator, Minnesota Department of Health Public Health Laboratory

Crystal Fortune, biosafety officer, Montana State Public Health Laboratory

LEAD Award

Recognizes the legacy of Eva J. Perlman, APHL's first chief learning officer, who over three decades helped shape the public health laboratory workforce and

represented the attributes of "serving those who have served." This award honors an individual who exhibits the attributes of a leader, encourager, advocate and developer, and who has 10 or more years of service in a state, local or territorial public health laboratory, or other public health laboratory partner. This year there are two LEAD award winners.

- **Jeremy Corrigan**, director, County of San Diego Public Health Laboratory

Presidential Award

The APHL Presidential Award was selected by Dr. Scott Shone during his Presidential year (2025–2026) for the significant contributions that were made to the association's work to promote policies that strengthen public health laboratories. Dr. Shone chose two outstanding individuals for this year's Presidential Award.

- **Daniel Jernigan**, former director, Influenza Center and former director, National Center for Emerging and Zoonotic Infectious Diseases, CDC

- **Denise Toney**, director, Virginia Division of Consolidated Laboratory Services

Healthiest Laboratory Award

Given to an APHL member laboratory that is committed to safety, environmental process, environmental policy and employee health and wellness.

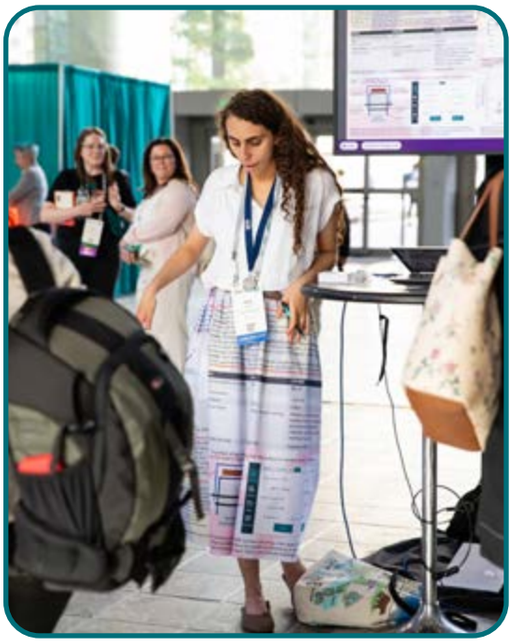
- **State jurisdictional award winner:** State Hygienic Laboratory at the University of Iowa

- **Local jurisdictional award winner:** Napa-Solano-Yolo-Marin County Public Health Laboratory

Award for Outstanding Contribution to Workforce, Training and Continuing Education

Honors an individual who has made significant contributions to the advancement of workforce development and training in public health laboratory science and practice; worked to provide continuing education opportunities, programs, policies or practices internally and/or through outreach to public health partners; or demonstrated a history of service with APHL committees, taskforces or workgroups focused on workforce development, continuing education or training.

- **Sinisa Urban**, division chief, Environmental Sciences, Maryland Department of Health Laboratories Administration ■



APHL Leadership Programs

continued from page 6

opportunity to remain connected to one another and APHL through discussions, shared resources and leadership conversations that support ongoing growth. These networks reinforce the idea that leadership development is not a single event; it is a sustained process that continues across careers.

Importantly, alumni engagement strengthens collaboration across laboratories and helps maintain institutional knowledge within the field. Participants often return as mentors, speakers or coaches for future cohorts, to contribute their experience and support the next generation of leaders. This cycle of engagement helps create a culture of shared learning that benefits the broader public health laboratory community.

As public health laboratories continue to respond to emerging threats and evolving priorities, strong leadership remains essential to maintaining readiness and resilience. Through ELP, LLOT and their alumni networks, APHL helps laboratory professionals grow as leaders while strengthening connections across the system. These investments support individual development and contribute to a more collaborative, adaptable and prepared workforce for the future. ■

Wadsworth Center CARE

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public speaking opportunity: "Wadsworth Friends and Family Seminar Series."

Impact Highlights

- A total of 13 activities completed in Year 1, with many Year 2 activities building on those foundational successes.
- 100% of Steering Committee survey respondents agreed that there were meaningful opportunities to contribute.
- ~50% of Steering Committee members highlighted their role as representatives of their laboratory/program/division as meaningful.
- 40% specifically cited the opportunity to contribute to the betterment of Wadsworth as a highlight.

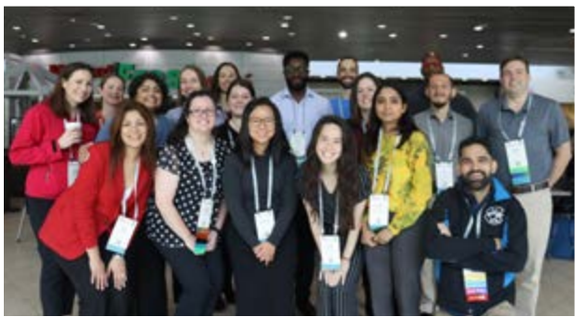
The Steering Committee is an exemplary model of engaging employees with meaningful opportunities to connect, create and succeed. ■

APHL'S 75TH ANNIVERSARY

75 Years of Workforce Development

career pathways by the numbers

- **297** fellows in **81** laboratories across **42** states and the District of Columbia
- **220** fellows-alumni in **75** laboratories across **39** states and the District of Columbia
- **47** current interns in **23** laboratories across **15** states
- **265** intern-alumni in **52** laboratories across **29** states and the District of Columbia
- **208** Public Health Laboratory Ambassadors in **63** organizations across **32** states, **1** US territory and the District of Columbia
- **23** current LLOT participants in **21** laboratories across **16** states and Canadian provinces
- **781** LLOT alumni in **65** laboratories across **35** states, American Samoa, Puerto Rico and Guam
- **39** current ELP participants in **30** laboratories, **8** federal and state agencies and **1** non-public health laboratory
- **289** ELP alumni across **44** states and the District of Columbia, **2** US territories, Canada and **91** public health organizations



The public health laboratory community has relied on a strong, evolving training infrastructure to meet the demands of science, preparedness and response. These efforts reflect a sustained commitment by APHL and the US Centers for Disease Control and Prevention (CDC) to strengthen the laboratory workforce through collaboration, innovation and shared purpose.

The Foundation: NLTN and NLTC

Established in 1989, the National Laboratory Training Network (NLTN) emerged during a period of profound change in public health. The HIV/AIDS epidemic, advances in laboratory technology and growing expectations for laboratory quality exposed gaps in training and workforce readiness. In response, the then-ASTPHLD and CDC created a decentralized national training network designed to deliver high-quality, affordable education while remaining responsive to state and local needs.

NLTN's defining feature was its Area Laboratory Training Alliance (ALTA) model, which encouraged cooperation without sacrificing state autonomy and ensured that training priorities were shaped by those closest to the work. From the outset, NLTN was as much a community as it was a program.

NLTN's first course was delivered in late 1989, and by the early 2000s, it had delivered thousands of training activities, reaching more than 125,000 laboratory professionals and playing a central role in bioterrorism and chemical preparedness efforts nationwide.

Complementing this ongoing work, the National Laboratory Training Conference (NLTC) convened trainers, laboratory leaders and partners that—beyond formal sessions—fostered mentorship and reinforced the shared mission that sustained NLTN through decades of change.

A Culture Built on People and Perseverance

Stories from the early years of NLTN capture trainers traveling long distances with limited resources and adapting on the fly when technology or logistics failed. These experiences forged a resilient, problem-solving workforce united by a belief that training was foundational to public health practice.

In 2007, the network adopted a more nationally integrated business model, allowing it to remain flexible in a challenging economic environment while expanding its reach and delivery methods. By its 20th anniversary, NLTN had established distance learning platforms, mentoring programs and collaborative tools that pointed toward the future of workforce development.

The Evolution: PHLTC

Building on the legacy of NLTC, the Public Health Laboratory Training Conference (PHLTC) now serves as a national forum focused specifically on training and workforce development. Recent conferences have emphasized leadership, communication and adaptability during public health emergencies—particularly in the context of COVID-19.

PHLTC highlights cutting-edge methods of education and training, while reinforcing core principles established by NLTN: learner-centered design, collaboration across laboratory systems and continuous improvement. The conference underscores the interconnected nature of today's laboratory ecosystem and the critical role that training plays in sustaining it.

Planning for the 21st Century Workforce…and Beyond

In 2021, funding from the American Rescue Plan enabled the launch of Career Pathways in Public Health Laboratory Science: An APHL-CDC Initiative. Before this program, APHL could support only about 20 fellows per year due to limited resources. The expanded initiative has strengthened member laboratories by supporting fellows and interns who contribute to essential laboratory projects and capacity-building efforts—and many participants intend to remain in public health.

Funding from the American Rescue Plan also enabled APHL to establish the Academic Partnerships program, ensuring that the pipeline of laboratorians begins well before college graduation. Also, to reinforce the need for public health laboratory leaders, the Laboratory Leaders of Today (LLOT) program was launched in 2022 to replace the New Laboratory Director Orientation, which had not been offered since May 2017.

APHL's workforce story is one of continuity rather than replacement. Even though the tools, techniques and challenges have changed, the same values remain at the heart of public health laboratory training efforts today. ■

Evolving STI Diagnostics to Meet Public Health Needs

By **Richard Cullum**, PhD, manager, Scientific Affairs, Abbott Molecular Diagnostics; **Danijela Lucic**, PhD, director, Global Scientific Affairs, Abbott Molecular Diagnostics; and **Manoj Gandhi**, MD, PhD, senior director, Medical and Scientific Affairs, Abbott Molecular Diagnostics

Sexually transmitted infections (STIs) continue to rise across the United States, creating ongoing challenges for public health laboratories as they work to strengthen surveillance, improve case detection and support appropriate clinical management. STIs represent a persistent and growing public health burden, with millions of new infections occurring annually and many more remaining undiagnosed. For US public health laboratories, two factors increasingly affect STI prevention and control efforts: the high prevalence of STI coinfections, and persistent gaps in access to comprehensive STI testing.

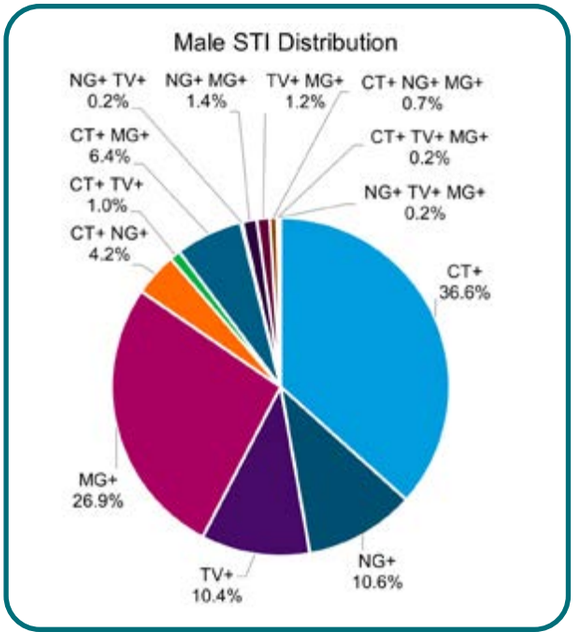


Figure 1. Distribution of STI infections and coinfections in the male study population. Adapted from Cullum et al., *Sexually Transmitted Diseases*, April 2026.

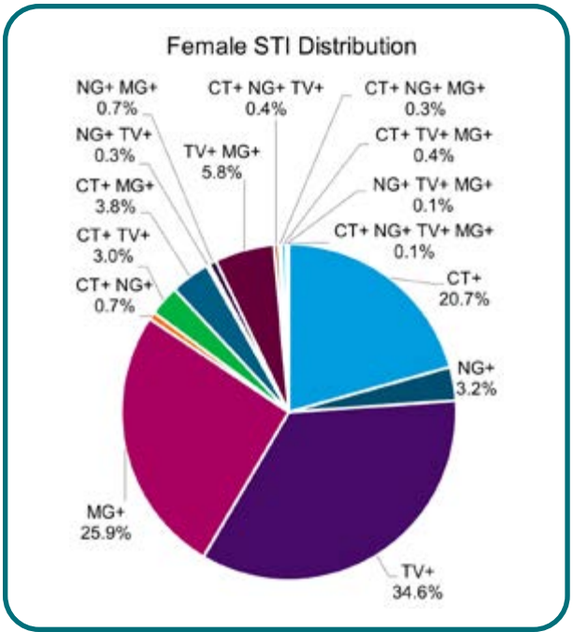


Figure 2. Distribution of STI infections and coinfections in the female study population. Adapted from Gentil et al., *Sexually Transmitted Diseases*, April 2026.

Recent multicenter evaluations of multiplex nucleic acid amplification tests (NAAT) that simultaneously detect *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG), *Trichomonas vaginalis* (TV) and *Mycoplasma genitalium* (MG) highlight the epidemiologic and clinical relevance of STI coinfections across the diverse US population.[1,2] Notably, the Alinity m STI assay is currently the only FDA-cleared molecular assay that enables detection of CT, NG, TV and MG from a single test, supporting flexible and efficient test utilization when testing is clinically indicated.

More Than Just Numbers

In a prospective study of more than 3,500 men, approximately 1 in 6 individuals with an STI (15.5%) were infected with at least two STI pathogens with the majority (73%) being other than CT+NG coinfections (**Figure 1**).[1] Similarly, among more than 3,300 women, approximately 1 in 6 STI-positive individuals (15.6%) were infected with at least two STI pathogens with an overwhelming majority (95.5%) being other than CT+NG coinfections (**Figure 2**).[2] These data demonstrate that relying solely on CT/NG testing underestimates the true burden of STI coinfections and may leave clinically relevant coinfections undetected.

The clinical and public health implications of coinfections are nuanced and pathogen-specific. Many STIs are asymptomatic, and when symptoms do occur, they are often overlapping or nonspecific, complicating syndromic management. When most coinfections involve pathogens outside the traditional panel, incomplete detection can result in persistent infection, reinfection of partners, repeat clinical encounters, and increased reliance on empiric therapy. From a public health laboratory perspective, understanding the contribution of pathogens beyond CT and NG is important for surveillance, program evaluation, and informing testing algorithms while still adhering to evidence-based guidance.

Equally important to an effective STI testing program is how and where specimens are collected. Structural barriers such as limited clinic access, stigma, transportation challenges and workforce constraints continue to limit testing uptake, particularly among populations with the highest disease burden. Patient-centered specimen

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Abbott is an APHL Diamond Level Sustaining Member.

From Surveillance to Action: Real-time Wastewater Insights at Mass Gatherings

By **Andrew Nsawotebba**, laboratory manager, Ministry of Health, Uganda—Department of National Health Laboratory and Diagnostic Services; **Noah Hull**, senior manager, Global Health; and **Tara Jones-Roe**, senior vice president, Sales and Marketing, Ceres Nanosciences, Inc.

Uganda team members gather water samples for pathogen testing. Photo: Ceres Nano.

Mass gatherings present a persistent challenge for public health systems. High population density, shared sanitation infrastructure and limited clinical capacity create ideal conditions for infectious disease transmission. Traditional surveillance methods—reliant on clinical reporting—often lag behind real-time spread.

A recent study from Uganda highlights a more proactive approach: real-time wastewater and environmental surveillance (WES) as both an early warning system and a trigger for immediate intervention.

A Real-World Test Case

During the 2025 Martyrs' Day celebration in Namugongo, Uganda, more than three million people gathered over several days. Recognizing the elevated risk, Uganda's Ministry of Health deployed a targeted WES strategy across 11 high-risk locations.

Over a four-day period, teams from the Uganda Ministry of Health Department of National Health Laboratory and Diagnostic Services collected 44 environmental samples from wastewater systems, surface water and communal sources. The goal was not only to detect pathogens, but to generate actionable insights in near real time.

Nanotrap® particles were integrated into the environmental surveillance workflow to enhance pathogen detection from wastewater and related sample types. As part of sample preparation, they enabled the capture and concentration of microbial targets prior to molecular analysis, supporting more reliable detection in complex, low-abundance settings. This contributed to improved data quality and consistency, helping ensure that surveillance outputs could effectively inform real-time public health response.

The findings underscored the value of environmental monitoring at scale. Multiple pathogens were detected across sampling sites, including:

- *Vibrio cholerae* (non-O1/O139)
- *Shigella* species
- Rotavirus
- Enterovirus
- SARS-CoV-2
- Mpox virus

Importantly, contamination levels varied significantly by location. While stagnant water and wastewater systems showed clear pathogen presence, protected sources such as official standpipes and designated "sacred" water points remained free of detectable contamination.

This level of spatial resolution enabled teams to distinguish between high- and low-risk environments, which was critical for prioritizing response efforts.

From Insight to Intervention

What sets this study apart is how quickly data translated into action. Surveillance results were communicated in real time to response teams on the ground, enabling immediate public health measures.

Interventions included:

- Drainage and chlorination of contaminated stagnant water
- Septic tank emptying in high-risk zones
- Relocation of food vendors away from contaminated areas

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Laboratory staff process samples for pathogen determination. Photo: Ceres Nano.

Ceres Nano is an APHL Platinum Level Sustaining Member.

Beyond the Data:

The Science of Storytelling

Strategies for telling public health stories of impact

By **Dara Chadwick**, writer

David Payne, PhD, PHLD (ABB), laboratory director for the City of Milwaukee Health Department Laboratory in Milwaukee, WI, grew up watching the television show "CSI: Crime Scene Investigation."

"In most episodes, there were a couple of quirky scientists working in a well-lit, well-funded, well-stocked lab," he said. "They'd get handed a tube of blood and 20 minutes later, they've identified the murderer, know what their mom's name was, where they went to school and what they ate for breakfast."

Not exactly an accurate reflection of public health laboratory work, but good storytelling nonetheless. In fact, storytelling is a critical tool that can help public health laboratories show the breadth and depth of their work, as well as its impact on communities.

"People often don't know the full scope of what we work on, including efforts like mosquito testing, food testing and disease surveillance," said Jocelyn Hauser, PhD, D(ABMM), MLS(ASCP), public health laboratory director in the Public Health Laboratory Division of the Department of Forensic Sciences in Washington, DC. "Stories help us highlight all this work that happens behind the scenes."

Storytelling is a critical tool that can help public health laboratories show the breadth and depth of their work, as well as its impact on communities.

Connecting With Audiences

Hauser has seen the impact that storytelling can have. After policymakers were invited to tour her laboratory, "they realized that we are not just an operational number," she said. "They saw that there is much more to this lab than line items in a budget."

Storytelling has helped boost the laboratory's visibility and her own as director, according to Hauser. "When I go to hearings and meetings, I'm now recognized as a representative of the lab," she said.

Being open about experiences, findings and innovations is key to increasing people's base knowledge of laboratory science and the importance of public health work, says Amanda Kwong, director of the Public Health Communications Collaborative, a program of the Bethesda, MD-based de Beaumont Foundation.

"When the public health system is working, you don't even notice it," she said. "That invisibility really cuts into opportunities to be loud and proud about what we do. Effective public health storytelling starts with thinking about why someone should care about this work. What's in it for them? How can you make your story interesting and relevant?"

Stories can help drive shifts in attitude and changes in behavior in ways that data and statistics don't, Kwong said. "Numbers and statistics are the proof," she said. "But to move people forward, it's important to connect data to emotion. Storytelling is the art of speaking to the brain and to the heart."

Today, public health laboratories have more opportunities than ever to tell their own stories. While traditional media outlets remain important in disseminating information, social media, podcasts, videos, blogs and websites now connect laboratories with varied audiences in new ways.

"People are not relying on traditional media as much as they used to," says Diane Brodalski, communications director for the Society for Health Communication and a public health communications consultant who has worked with the US Centers for Disease Control and Prevention (CDC). "They're seeking information on digital platforms, reading blogs and following influencers."

Director As Storyteller

Payne, who has been in the Milwaukee laboratory director role for three years, says telling the stories of his laboratory's work has required a mindset shift.

"It's not something they train us for in school," he said. "You spend so much time learning to do the science. Now, as the person who leads the team, I don't do any science anymore—I talk to people about science. I love doing that, but it is a very big change."

He jokingly refers to his department's communications team as his "designated normies."

"They're people who have never sat at a bench or held a pipette, but they read the newspaper every day," he said. "I'll go to them with an idea and say, 'Hey, I think this is neat. Would a normal person think this is neat?' They may say no, yes or recommend approaching the topic in a way I hadn't thought about."

Hauser said that telling effective stories often means seeing "routine" laboratory work in a new way. She also relies on her laboratory's embedded public information officer (PIO) to help identify stories that can best showcase the work of laboratorians.

"I'm a scientist," she said. "We're not really trained to talk about ourselves and what we do. Our PIO points out stories and helps me see the value of talking about the work we do, rather than just glossing over it and thinking, 'Oh, we do that every day.'"

Building Trust Through Stories

Payne said he likes to focus on laboratory efforts that have "invisible" impact. This is the laboratory work where the people who benefit from it don't always know how they benefit, such as wastewater monitoring or air monitoring, he said.

"We're currently looking at respiratory pathogens in our public schools—just in the air, not in any specific patients or kids," he said. "That's something that benefits everybody in the school and in the students' families, as well as all their neighbors. It's an effort that helps the whole community and they've never heard about it. Stories like that, where people don't necessarily know the benefits they're getting from the laboratory's work, are the ones I really like."

Payne also cited the City of Milwaukee Health Department Wastewater Dashboard as an example of impact storytelling. The dashboard uses a stoplight warning system as a visual to help people understand how levels of COVID, respiratory syncytial virus, influenza A and influenza B are changing in their community. Each level—green (low), yellow (moderate) and red (high)—includes appropriate health recommendations people may take to protect themselves at specific levels of disease activity.

The dashboard includes maps that show actual data, trend lines and data points for Milwaukee proper and its suburbs. "This tool shows the public

we know what we're talking about and here's what it means for them," Payne said. "Everyone has a different risk tolerance and different circumstances. We put information in people's hands and let them make their own decisions on it. That information is important for building trust."

Trust is critical in public health storytelling. Brodalski noted that when a story is difficult or risk is evolving, it's important to have the right messenger. "If there's someone in the organization who has a connection with the audience and can speak with empathy, that's important for building trust," she said. "It's also important to say, 'This is what we know, this is what we don't know, and this is what we're working on.'"

Public health laboratories also need to consider how they talk about science and uncertainty, especially when telling stories to audiences that may not have a good understanding of basic science.

"That's a really important part of storytelling," Payne said. "We need to learn to find the balance between 'I am confident in this and it might change, but for right now, the very best we know is this' and 'Tomorrow, if we find something different, we should do that.'"

Telling stories that stick

Payne said that too often in public health, doing the job right means the work of laboratory teams remains invisible.

"I'd be lying if I said that resources aren't a part of the discussion," Payne said. "People are happier when their tax dollars go to something they understand and not to some shadowy group of government nerds. But there's a lot more to it than that. Telling stories of our work also helps the people who work here feel seen. We are the people behind the curtain making everything happen, which is fun, but is also sometimes a little bit lonely."

During tours, Payne highlights the fact that public health laboratories include both scientists and nonscientists. "There are almost as many people off the bench supporting the scientists as there are scientists on the bench," he said. "I try to emphasize how much goes into that test result that gets pushed to your MyChart. That yes or no result is often the work of a dozen people."

> **"Effective public health storytelling starts with thinking about why someone should care about this work. What's in it for them? How can you make your story interesting and relevant?"**
>
> ***— Amanda Kwong***

Profiling individual scientists and highlighting the work of special laboratory teams can be rich sources of stories. Brodalski suggested telling stories of how scientists came to their position and the comprehensive training they completed to prepare them for the role. "There needs to be a personal face to this important work," she said.

Payne said he uses images to tell stories, where appropriate. In a prior role, he shared a picture of a mobile COVID testing truck parked in front of a convent, where a group of nuns dedicated themselves to helping people with terminal disease. His goal? To tell a story that went beyond statistics and positive predictive values.

"We went there to test for COVID because of an exposure concern and we wanted to make sure that the sisters were not spreading the virus to the people they were there to take care of," he said. "That picture of the truck in front of the convent stuck with people in a way that statistics don't. The key is making it a human story that involves numbers instead of a number story about people."

Hauser said it is important for public health laboratories to convey information about their work to outside people in ways they can understand. "My team likes to talk about the platform and methodology they're using," she said. "But we need to bring it back to why this work is important to the person hearing the story."

Payne agreed.

"It's easy for us scientists to geek out and say, 'We run a fourth-generation HIV antigen antibody combo test, and that's really cool,'" he said. "But what people really care about is that onsite at our sexual health clinic, we're able to run HIV screening tests and return results so fast that the patient is still in the room with the nurse when they get those results and can get connected to care. That's impactful."

Great public health storytelling also has other important impacts — including bringing new scientists into public health laboratories.

"It helps people come into the profession," Hauser said. "I didn't even know about lab science until well after I'd graduated from college. Telling these stories helps bring the profession to light. When people see scientists in their lab coats doing the actual work, I think they better understand the seriousness of this work." ■

Storytelling Strategies for Public Health Laboratories

Scientists aren't often trained in the art and science of storytelling. ***But storytelling does get easier with practice.*** *Here are some strategies to help tell effective public health stories:*

- **Know your audience—and your goal.** Are you sharing the story of disease surveillance efforts to help the public understand why the department is making certain health recommendations? Are you shining a spotlight on how advanced technology enables testing breakthroughs to help secure more resources from policymakers? Understanding who you're talking to and the action you want them to take can help you better design your story.

- **Use plain language.** Most people in the US read at a grade 5-8 level, while many science terms are a grade 10-12 reading level, says Amanda Kwong, director of the Public Health Communications Collaborative. "A word that is more advanced can cause confusion or possibly cause someone to ignore your message completely," she said.

- **Use a framework.** Stories are all about understanding cause-and-effect relationships, Kwong said, and it's a framework that can work well for public health laboratories. "Tell the story of the work produced in the laboratory and what happens because of it," she said. "Think about saying: With this laboratory work, this is what happens. Without this work, that is what happens."

- **Make impact the star.** Great public health stories elevate impact and let data and methodologies play supporting roles. Draw direct connections between the laboratory's work and public health impacts, says Diane Brodalksi, communications director for the Society of Health Communication. "For example, because we did this testing, we prevented an outbreak, children missed fewer days of school and working parents didn't have to rearrange childcare," she said.

- **Answer the "what now" question.** Stories in books, movies and television follow a defined arc, Kwong said. "There are people, a problem, solutions and impact. In public health, we add the call to action," she said.

- **Be authentic.** Talk about your work in a conversational way to help make your stories more understandable. "Perfection can be the enemy of good when it comes to communication and messaging," Kwong said. "Your story has to reflect the accuracy of your data, but it also should be authentic to you and your voice."

- **Lean on visuals.** Visual elements such as infographics and interactive dashboards can help tell stories of your work. "They can be easier to understand for people who aren't scientists and can help make information less overwhelming," Brodalski said.

- **Prepare for follow-up.** When you engage in storytelling, you're starting a conversation. Be ready for the questions you may get if you're a spokesperson. Anticipate what people may ask and how best to answer those questions as part of "designing" your stories, Brodalski said.

Why Communicating Biomonitoring Success is Needed

By **Rebecca Hunt**, MS, project officer, Division of Laboratory Sciences, National Center for Environmental Health, US Centers for Disease Control and Prevention

What is biomonitoring? The term usually causes confusion for people who are not actively involved in environmental public health. Chatting with friends and family, the most common assumption I have heard is that biomonitoring involves monitoring of vital signs like blood pressure, heart rate or glucose. But that's not biomonitoring. Simply put, biomonitoring is the measurement of chemicals in blood, urine or serum.

The next common question is, "Why would I want to participate?" Biomonitoring measurements are valuable to communities dealing with chemical contamination and who want to learn more about their exposure levels. In addition, biomonitoring data can inform policy decisions and be used to track trends in exposure over time. For example, biomonitoring measurements showing high levels of lead in the American population were a major factor in the removal of lead from gasoline. Subsequent biomonitoring measurements show a steep decline in lead levels over time.

Biomonitoring is an integral part of public health; however, state and local level data are limited. Through its National Biomonitoring Program, the US Centers for Disease Control and Prevention (CDC) uses biomonitoring of National Health and Nutrition Examination Survey (NHANES) participants to publish national level exposure data for over 400 chemicals in the National Exposure Report (NER). The data in the NER can be used to help drive national policy but do not offer information on state or local levels of exposure to chemicals.

To address state and local-level needs, CDC launched the State Biomonitoring Cooperative Agreement to help state public health laboratories build their ability to measure chemicals of concern in their communities. Communities have successfully used these measurements to inform parents about their child's exposure during formative years, educate mothers on their lead and mercury exposure to protect their babies during pregnancy, determine PFAS levels in a statewide sample of Michigan firefighters, and inform private well users about their pesticide and metal exposures. Each of these stories powerfully demonstrates the need for and importance of biomonitoring measurements in state public health laboratories; however, their power is limited if programs do not know how to communicate clearly. In an age where we consume information on-the-go, it is

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Restoring Safe Drinking Water in the Wake of Destruction

By **Chris Goforth**, MS, environmental sciences manager, North Carolina State Laboratory of Public Health; **DeMonta Newborn**, environmental microbiology supervisor, North Carolina State Laboratory of Public Health; **Denise Pettit**, PhD, assistant director, Science and Technology, North Carolina State Laboratory of Public Health; **Scott Shone**, PhD, director, North Carolina State Laboratory of Public Health; and **Sydney Comet**, MPH, specialist, Environmental Health

Destruction caused by Hurricane Helene. Photo: NCDHHS DPH.

As we enter a new hurricane season, it is important to reflect on the most destructive hurricane ever to strike Western North Carolina—an area not typically associated with such devastation. In 2024, Hurricane Helene was the most destructive weather event ever to strike Western North Carolina (WNC)—an area not typically associated with such devastation. The storm caused more than 100 deaths, destroyed thousands of homes, washed out thousands of miles of transportation infrastructure, eliminated communication networks, and contaminated countless private drinking water wells that served as the primary water source for millions of residents. As floodwaters receded, the region faced significant challenges in ensuring that well water was again safe to drink. The widespread destruction of basic infrastructure forced the North Carolina Department of Health and Human Services' Division of Public Health (NCDHHS DPH) to rethink its standard approach to well water restoration.

Rainfall totals reached 10–20 inches across much of WNC, with some areas receiving up to 30 inches of rain. The region's mountainous terrain amplified flooding impacts and thousands of wells were under flood waters. As flooding receded, state officials recognized that traditional methods of well assessment and remediation, including site visits to individual homes, would not work. Roads and highways had been destroyed, making site visits nearly impossible and severely limited residents' ability to travel for supplies or assistance.

NCDHHS DPH developed a direct-to-consumer (DTC) approach for drinking water well recovery, built around the

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STI Diagnostics

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collection strategies, including in-clinic self-collection and at-home self-collection of vaginal swabs and urine specimens, offer a scalable solution that aligns with US public health priorities around access and equity. In this setting, simpli-COLLECT™ STI is currently the only FDA-cleared at-home collection kit that supports 4-in-1 STI testing (CT/NG/TV/MG) when used with the Alinity m STI assay, providing a validated option for decentralized specimen collection.

Preparing Public Health Laboratories

For public health laboratories, these findings have direct programmatic implications. Supporting in-clinic self-collection and FDA-cleared home-collection models enables expansion of testing into nontraditional settings such as telehealth programs, community outreach initiatives and partner services programs. These approaches align with public health goals to meet patients where they are, reduce diagnostic delays, mitigate staffing constraints, and improve equity in STI prevention and care. Public health laboratories play a central role in validating specimen types, ensuring quality across decentralized collection pathways, and guiding clinicians and programs on appropriate test utilization.

As STI rates continue to rise, public health laboratory strategies must balance comprehensive detection with evidence-based test utilization. Growing evidence on STI coinfections underscores the need for flexible, modern laboratory tools and collection models. Multiplex diagnostics paired with patient-centered specimen collection offer a path forward to strengthen surveillance, improve clinical care, support antimicrobial stewardship, and advance equitable STI prevention and control efforts in the US. ■

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Mass Gatherings

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- Reinforcement of water, sanitation and hygiene (WASH) infrastructure
- Deployment of clinical screening stations
- Multilingual risk communication for attendees

In several instances, contamination detected near high-traffic areas triggered same-day remediation, reducing exposure risk before it could translate into clinical cases.

Why It Matters

This work demonstrates a meaningful shift in how wastewater surveillance can be applied, moving beyond retrospective monitoring to real-time decision support.

Several key advantages emerge:

- **Early warning:** Detection of pathogens in the environment provides advance notice ahead of clinical case reporting.
- **Targeted response:** Site-specific data allows interventions to be focused where they are most needed, optimizing limited resources.
- **Multi-pathogen detection:** Simultaneous identification of bacterial and viral threats offers a broader understanding of public health risk.
- **Operational integration:** Embedding surveillance within field response systems ensures data leads directly to action.

Notably, this represents one of the first large-scale implementations of WES for a mass gathering in Sub-saharan Africa, demonstrating feasibility in a resource-constrained setting.

A Framework for Future Preparedness

As global travel and large-scale events continue to expand, the need for proactive, scalable surveillance systems is increasing. Wastewater epidemiology is uniquely positioned to meet this need—offering population-level insights without reliance on individual testing. For mass gatherings and other high-risk settings, this approach offers a practical path toward earlier detection, faster response, and ultimately, reduced disease transmission. The Uganda experience provides a replicable model: integrate environmental surveillance with rapid response infrastructure and use data to guide interventions in real time. The study illustrates a clear evolution in public health strategy. When wastewater surveillance is paired with operational response, it becomes more than a monitoring tool—it becomes a mechanism for prevention. ■

CryptoNet at 11: A Decade of Science, Surveillance and Shared Public Health Action

By **Rhodel Bradshaw**, senior specialist, Food Safety

For over a decade, CryptoNet has demonstrated what public health can accomplish when laboratories, epidemiologists and national partners operate as a true network rather than as isolated programs. What began as an effort to strengthen the detection and investigation of cryptosporidiosis has grown into one of the nation's most important collaborative surveillance efforts for parasitic disease. In a public health environment that is increasingly stretched, CryptoNet stands as a reminder that strong surveillance is not optional infrastructure. It is one of the clearest ways public health protects people before more illnesses occurs.

That work matters because *Cryptosporidium* remains a serious and persistent public health challenge. Cryptosporidiosis is a leading cause of waterborne disease outbreaks in the United States and an important cause of zoonotic enteric illness. It spreads through treated recreational water, animal contact, childcare settings, contaminated food and other everyday exposures. It affects the places families trust most: pools, waterparks, childcare centers, fairs, farms and community settings where people expect to be safe.

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Health Challenges Posed by *Cryptosporidium*

The scale of that burden reinforces the need for strong surveillance. A CDC estimate of infectious waterborne disease in the United States suggests that cryptosporidiosis alone accounts for more than 800,000 illnesses annually across all exposure routes. Outbreak data further illustrates its impact. A review of U.S. outbreaks during 2009–2017 identified 444 outbreaks resulting in 7,465 cases, 287 hospitalizations and one death, with reported outbreaks increasing by about 13% per year. Treated recreational water accounted for the largest share of outbreaks and cases, while cattle exposure and transmission in childcare settings were also major drivers. Together, these findings highlight a key reality: cryptosporidiosis is a multi-pathway public health threat that requires a surveillance approach capable of seeing across those pathways.

CryptoNet was built to meet that challenge with something stronger than case counting alone. In the early 2010s, the US Centers for Disease Control and Prevention (CDC) and public health partners began shaping a molecular surveillance model for *Cryptosporidium*. By 2015, CryptoNet was formally launched as the first US molecular-based surveillance system for a parasitic disease. It created a national framework that paired laboratory characterization with epidemiologic data in ways that could reveal patterns traditional approaches often missed. Instead of simply confirming infection, public health gained a clearer understanding of how transmission occurs.

Solutions Found Through Collaboration

From the beginning, CryptoNet has been defined by collaboration. CDC provides national coordination, scientific leadership and technical development. APHL supports laboratory connectivity and the infrastructure needed to sustain participation across jurisdictions. State and local public health laboratories, alongside epidemiologists and outbreak response teams, generate the data, investigate cases, submit specimens and translate findings into action. Just as important, the network strengthens the connection between laboratory results and epidemiologic context. This integration ensures that molecular findings are not interpreted in isolation but are directly linked to exposure histories, outbreak investigations and public health decision making. That connectivity is what allows CryptoNet to move beyond data generation and into meaningful public health response.

A Decade of Scientific Learning

Over the past decade, CryptoNet has strengthened investigations across a range of settings, including recreational water outbreaks, zoonotic transmission events and childcare-associated spread. In aquatic venue outbreaks, molecular characterization has helped clarify links among cases and support faster, more coordinated responses. In childcare settings, it has helped identify transmission patterns that extend beyond individual facilities, reinforcing the importance of exclusion policies and prevention practices. These applications demonstrate how integrated surveillance supports both outbreak detection and response.

The network has also advanced understanding of transmission patterns and risk factors. State-based

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Uganda Ministry of Health Launches National Laboratory Data Repository

By **Faith Chepkemoi**, senior specialist, Administration and Operations, Kenya and **Rufus Nyaga**, deputy country director, Kenya

Dr. Charles Olaro, director health services, Commissioners Susan Nabadda and Paul Mbaka and other participants attended the launch of the National Laboratory Data Repository in Kampala Uganda.

The Uganda Ministry of Health has officially launched the National Laboratory Data Repository (LDR), marking a major digital milestone in Uganda's healthcare system. The platform serves as a one-stop national hub for laboratory information systems and feeds directly into the Ministry's National Health Data Warehouse.

The LDR was developed with technical and financial support from APHL through funding from the US Centers for Disease Control and Prevention (US-CDC), and technical support from CDC Uganda.

By consolidating laboratory data into a single governed system, the LDR provides faster access to trusted information, strengthens laboratory–clinical linkages, and establishes a reliable foundation for evidence-based decision making at facility district, and national levels.

Dr. Charles Olaro, director general of Health Services described the LDR as a strategic pillar of Uganda's National Digital Health Strategy.

"Digitization is only meaningful when data is actively used. The National Health Data Warehouse strengthens laboratory–clinical linkages, informs national health decisions, and enables analytics that support a resilient and data-driven health system," Olaro said.

Addressing Fragmentation in Laboratory Systems

Dr. Susan Nabadda, commissioner, National Health Laboratory and Diagnostic Services (NHLDS) noted that Uganda's laboratory sector has historically faced fragmented information systems, limiting the ability to generate a consolidated national picture. The LDR addresses this challenge by providing a centralized platform that integrates laboratory databases and enables real-time access to information through a single national window.

"The LDR enables timely use of data and faster clinical and public health decision-making. This is not just a technical upgrade it is a strategic investment in evidence-based diagnostics and health system management," she explained.

Key Capabilities of the LDR

Through the repository, the Ministry of Health can now monitor and analyze:

Laboratory test volumes by facility

Disease trends and surveillance indicators

Turnaround times and laboratory performance

Pandemic preparedness metrics

Commodities and human resource utilization

Reliability and quality of laboratory services

The platform enhances transparency and accountability by reducing duplication, improving reporting and ensuring secure access to well-governed national laboratory data.

Strengthening Health System Performance

Paul Mbaka, assistant commissioner, Division of Health Information, welcomed the innovation and underscored the importance of post-deployment monitoring to ensure optimal system performance.

"We have had many scattered dashboards in the past, so this unified product is highly commendable. Congratulations to NHLDS on achieving this important milestone," he said.

The LDR functions as a central digital exchange and analytics layer within Uganda's laboratory ecosystem. Health facilities securely transmit standardized data in real time, which is validated,

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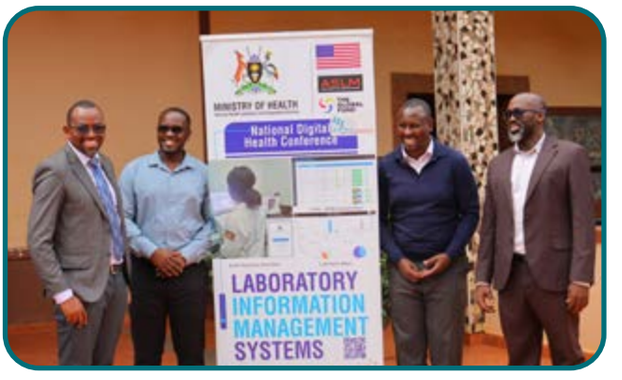

From right: Paul Mbaka (MoH), Jonathan Ntale (US-CDC), Jacob Muhire (CPHL) and Rufus Nyaga (APHL).

Advancing Public Health Through Metagenomics: Kenya's Collaborative Success Story

By **Edwin Ochieng**, MBA, country director, Kenya; and **Jully Okonji**, senior laboratory specialist, Kenya; **Kimberly McCarthy**, PhD, US Centers for Disease Control and Prevention; and **Naomi Lucchi**, PhD, US Centers for Disease Control and Prevention

Delegates at the KASH 2016 mNGS symposium.

Over the past two years, the US Centers for Disease Control and Prevention (CDC) has provided technical and financial support to APHL to implement Applied Science Hub (ASH) projects aimed at strengthening genomic surveillance and the use of metagenomics to address priority public health threats in Kenya.

By improving Kenya's ability to rapidly detect, characterize and respond to emerging disease threats, CDC support is strengthening national preparedness and advancing global health security.

A cornerstone of this progress has been the convening of experts through two national symposiums focused on metagenomics. These gatherings—culminating in the 2026 Kenya Medical Research Institute Annual Scientific and Health (KASH) conference—brought together more than 150 participants from government, academia and industry. Far more than academic exchanges, these symposiums created a shared vision for how genomics can address complex health challenges across human, animal and environmental systems.

The impact of metagenomic next generation sequencing (mNGS) was evident across multiple fronts. In clinical care, the technology enabled the identification of a rare, life-threatening central nervous system infection in a 62-year-old patient—an outcome that would not have been possible using conventional diagnostics. In disease surveillance, mNGS proved invaluable in resolving undifferentiated febrile illnesses, helping detect and characterize threats such as mpox clade 1b. These advances underscore how metagenomics can close critical diagnostic gaps and support faster, more accurate outbreak response. Equally important has been the expansion of mNGS beyond human health. CDC-supported collaborations between Kenya, the Kenya Medical Research Institute (KEMRI) and the Wildlife Research and Training Institute demonstrated how nanopore-based sequencing can monitor transboundary health threats, reinforcing a One Health approach that recognizes the interconnectedness of people, animals, and ecosystems. The symposiums also highlighted the growing role of artificial intelligence in public health genomics.

By integrating artificial intelligence (AI) into bioinformatics pipelines, long-standing data processing bottlenecks can be addressed, dramatically reducing the time from sample collection to actionable results. This acceleration is critical in outbreak settings, where every hour matters.

Underlying all these successes is a strong foundation of public-private partnership. Collaboration between government agencies, research institutions and industry partners has been instrumental in scaling technologies, sharing expertise and aligning priorities. The robust participation of private sector partners at the symposiums highlighted how these partnerships can accelerate innovation and ensure that cutting-edge tools are accessible and sustainable within national systems.

Looking ahead, Kenya's path is clear. Priorities include standardizing mNGS workflows, mapping sequencing platforms across the country, strengthening data quality frameworks, and improving data-sharing governance. The vision is not just technological advancement, but a cohesive ecosystem where data, expertise, and infrastructure work seamlessly together.

Kenya's experience demonstrates that metagenomics is more than a laboratory tool—it can be a catalyst for transforming public health. By bringing experts together, investing in partnerships, and embracing innovation, the country is building a resilient, future-ready health system. ■

NC Hurricane Response

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principle of "disinfect before you collect." Teams from DPH assembled well recovery kits comprised of disinfecting supplies including a bucket, chlorine packet, hoses and a funnel, and bacteriological testing materials including alcohol swabs, a barcoded collection container and a barcoded instruction sheet that allowed homeowners to retrieve results. Combining both components into a single kit simplified the process and reduced the number of trips displaced residents needed to make to DTC pickup sites.

The recovery kits also included links to instructional videos that homeowners could access once cellular service was restored. Approximately 10,000 free well recovery kits were distributed across the region.

The storm also prompted a reevaluation of how well testing kits were packaged. Individual shipping canisters for

Key Modifications to Hurricane Response Plan

- Developed well water testing kits for distribution to community members.
- Packaged kits in bulk (50 individual sample packets per kit) to reduce distribution time and costs.
- Included both sample collection materials and disinfecting supplies in each kit.
- Created and shared instructional videos to guide community members through proper well water testing.
- Established designated sample drop-off sites for community use.
- Implemented mobile laboratory testing in high-need areas.
- Partnered with local, state, and federal laboratories to expand testing capacity.
- Communicated results in multiple simultaneous ways including calling property owners directly, posting PDF copies of reports to the agency's website, and paper results

each sample created a bottleneck in distribution. Although the canisters protect single bacteriological samples, they are bulky, expensive and slow down distribution. To overcome this obstacle, bulk "storm well testing kits" were developed containing 50 individually packaged sample packets. Each packet included a barcoded collection vessel in a bubble-wrap sleeve, a submission form, and the instruction sheet sealed in a zip-closure bag. This bulk approach allowed thousands of collection kits to be safely distributed within days of the storm.

Transporting samples required laboratory network and courier coordination to meet holding-time requirements. When residents returned their samples to DTC sites, they were triaged and routed to one of several testing locations: the North Carolina State Laboratory of Public Health (NCSLPH), an EPA Region 4 mobile laboratory, or one of several certified local health department (LHD) laboratories with expanded capacity. The NCSLPH supplied reagents to LHD laboratories. Both the NCSLPH and the EPA mobile labs operated on extended work schedules to ensure timely testing. This coordinated drinking well testing network approach successfully delivered samples within required hold times and return results quickly despite the region's difficult conditions.

Returning results to residents required multiple strategies. With limited internet access in WNC, all positive results from NCSLPH testing were called to homeowners by the laboratory or LHD staff. In addition, the NCSLPH created a dedicated website where PDF copies of all reports were posted. Homeowners with online access could quickly retrieve their well results using their barcoded instruction sheet.

Hurricane Helene underscored the need for severe weather preparedness across all parts of the state. Future public health responses for tropical storms will be informed by the lessons of Helene with strategies that reflect the state's diverse landscapes from mountains to coast. ■

Biomonitoring Success

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important to communicate with multiple audiences with varied backgrounds quickly and effectively.

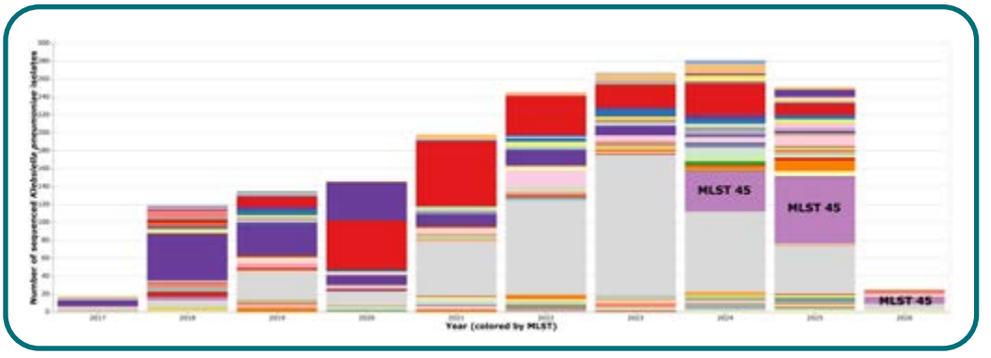
At CDC, we are encouraging recipients of the state biomonitoring cooperative agreement to share successes of their programs broadly. Success is anything that helps a program accomplish one of its goals. In the laboratory, success could mean the development of a new method to provide results that have never been reported before or solve a crucial problem such as sample shipment. Success could also mean the bridging of new relationships within a laboratory's organization, or with communities they will engage. Working with a simple formula, we hope to help programs show the challenge or problem encountered in their work, the action they took to address it, and the resulting impact. Programs can share these stories with numerous audiences including media, decision-makers, or community members.

A key component of the biomonitoring work is the active participation of people who want to learn more about their chemical exposure. This continues to be a difficult step for all biomonitoring programs. These stories can help build trust in communities by demonstrating what biomonitoring is and how it can help inform people about their exposure. As the work continues, biomonitoring can help state and local officials make decisions that benefit not only the study participants but also all of their residents.

The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the US Department of Health and Human Services, or the US Centers for Disease Control and Prevention Division of Laboratory Sciences. ■

Whole Genome Sequencing Detects Regional Cluster of New Delhi Metallo-β-lactamase Carbapenemase-producing *Klebsiella pneumoniae* in New York

By **Catharine Prussing**, MHS, PhD, research scientist 3, New York State Department of Health-Wadsworth Center, **Elizabeth Nazarian**, MT(ASCP), research scientist 4, New York State Department of Health-Wadsworth Center and **Kimberlee Musser**, PhD, chief, Bacterial Disease, New York State Department of Health-Wadsworth Center



Count of all sequenced *Klebsiella pneumoniae* isolates at Wadsworth Center by year, colored by multi-locus sequence type (MLST). The outbreak strain, MLST 45, is colored in light purple.

In November 2024, epidemiologists from the New York State Department of Health identified six residents of the same nursing home with highly antimicrobial-resistant *Klebsiella pneumoniae* (KPN) infections. Isolates from these patients had been sent to the Wadsworth Center, the Northeast Regional Laboratory for the Antimicrobial Resistance Laboratory Network (AR Lab Network), where they underwent whole genome sequencing (WGS). The results revealed that all isolates belonged to the same multilocus sequence type (MLST 45) and carried the same variant of the New Delhi metallo-β-lactamase carbapenemase gene (bla_{NDM-5}). To assess whether the isolates were genetically closely related, the epidemiologists requested a relatedness analysis.

Building a History…

Wadsworth Center's in-house bacterial relatedness pipeline, BactoCluster, is routinely used to analyze all KPN isolates that undergo WGS, including all submitted bla_{NDM}-carrying KPN isolates from the Department of Health. Each isolate is compared against all previously sequenced isolates in the database. The six isolates from the nursing home were found to be closely related to 18 additional KPN isolates, all collected in 2024 from the same region of New York as the nursing home. No other KPN sequences in the database were closely related to this group of 24 isolates.

The outbreak continued to expand in 2025 as epidemiologists investigated links between the affected patients and requested colonization screening of other residents in impacted facilities. Swabs collected during these screenings were tested at Wadsworth Center, identifying additional patients colonized with the outbreak strain. To further characterize the strain, Oxford Nanopore-based long-read WGS was performed, revealing that the bla_{NDM-5} gene is located on a plasmid carrying eight additional antimicrobial resistance genes. Highly similar bla_{NDM-5}-carrying plasmids were also identified in three unrelated KPN MLSTs and one *Enterobacter hormaechei* isolate from the region collected in 2024 and 2025. These findings suggest that, in addition to clonal expansion of the outbreak strain, horizontal transfer of the outbreak-associated plasmid is occurring among unrelated bacteria. Testing of municipal wastewater in the region in 2025 has also identified both the outbreak strain and a *Klebsiella oxytoca* isolate carrying a similar bla_{NDM-5} plasmid, further suggesting its apparent horizontal transfer. The outbreak strain has continued to be identified among clinical isolates from the region in 2026 but has not yet been identified outside the region.

…to Make the Case for WGS

This outbreak highlights the value of WGS for identifying outbreaks, particularly in high-prevalence settings such as New York where bla_{NDM} is more common. The integration of long-read sequencing and wastewater surveillance further helped define the scope and transmission dynamics of the outbreak. ELC funding (AR Lab Network and Advanced Molecular Detection (AMD)) as well as AR Lab Network-supported testing and surveillance were crucial in both the initial identification of the outbreak and ongoing testing and monitoring.

In response to this outbreak, Department of Health epidemiologists in collaboration with the US Centers for Disease Control

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We would like to acknowledge our epidemiologist colleagues from the Department of Health's Western Regional Office Healthcare Epidemiology and Infection Control Program and Bureau of Healthcare Infections, and from the CDC Division of Healthcare Quality and Promotion and Epidemic Intelligence Service Office, for their collaboration and work on this investigation.

September is
Public Health Laboratory Appreciation Month

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Celebrating Public Health Laboratory

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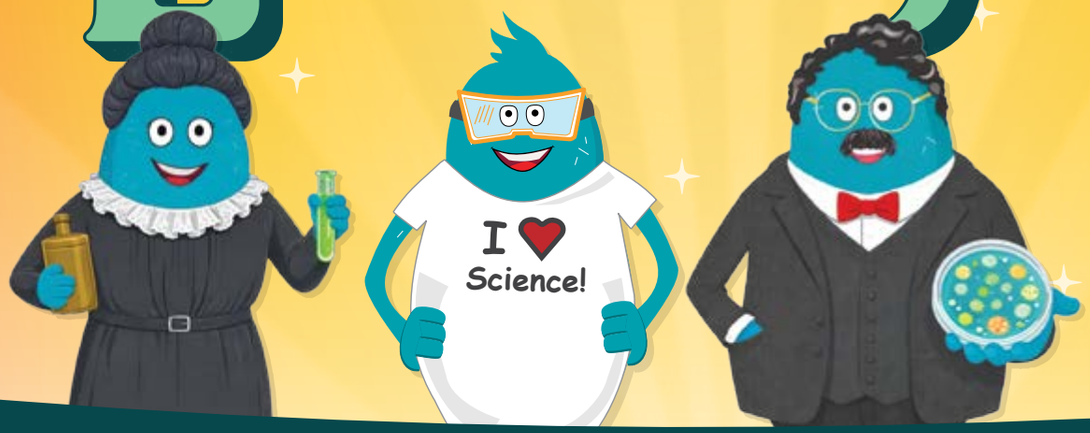

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APHL Convenes 14th National Conference on the Laboratory Aspects of Tuberculosis

By **Sarah Buss**, PhD, D(ABMM), program manager, Infectious Diseases

Tuberculosis (TB) laboratorians from across the country gathered in Atlanta for the 14th National Conference on Laboratory Aspects of TB, March 10–12. The meeting is typically held in conjunction with the National Laboratory Coalition of America's (NTCA) National TB Conference but was required to be rescheduled and held separately. In June 2027 we look forward to rejoining NTCA for a co-located conference. Although we missed our NTCA partners, the meeting served to highlight the collaborative nature of the TB laboratory community, and the unique role that public health laboratories play when it comes to TB testing.

Dr. Ed Desmond, Director of the Hawaii Department of Health State Laboratories Division, set the tone for the conference in his keynote address given in partnership with Dr. Janice Louie, Medical Director of the San Francisco Tuberculosis Prevention and Control Program. Desmond stated that when it comes to TB, public health laboratories frequently serve a clinical role, referencing the specialized drug susceptibility testing conducted by many public health laboratories and stressing the importance of rapid turnaround times. Throughout the conference the community's strong commitment to technical excellence and improved clinical and public health impact was evident.

During the plenary sessions and interactive discussions, attendees shared new information and practical solutions, including strategies for evaluation and implementation of new technologies, addressing technical aspects of TB and non-tuberculosis *Mycobacteria* testing, strengthening workforce capacity and improving workflows. The "Back to Basics" session was popular and underscored the importance of foundational laboratory knowledge in addition to pursuit of advanced technologies.

A major conference highlight was the recognition of leaders whose work has strengthened the TB laboratory workforce and enhanced TB services nationwide. Angie Schooley was honored with the *On the Front Lines of TB Testing* award for her "commitment, innovation and selfless service" during her 32-year career in TB testing at the Michigan Department of Health and Human Services Bureau of Laboratories. The NTCA recognized Nate Simon (2025) from the Wisconsin State Laboratory of Hygiene and Joseph Shea (2026) from New York State's Wadsworth Center with the Ed Desmond TB Laboratorian award for their outstanding technical expertise and service to the field. The David Warshauer TB Lifetime Achievement Award celebrated two scientists who have devoted their careers to advancing public health mycobacteriology: Dr. Max Salfinger, University of South Florida College of Public Health, and Desmond. Over the course of decades, they have worked separately and together to shape modern mycobacteriology practice and mentor generations of laboratorians. These awards served as a reminder that progress in TB testing depends not only on new tools, but also on the expertise, persistence and leadership of the people behind them.

The conference program also highlighted the people impacted by TB testing in a variety of ways. Maria Similos, author of *The Black Angels: The Untold Story of the Nurses Who Cured Tuberculosis* spoke to attendees about the black nurses who helped patients fight TB before and after development of the first effective antibiotics. Karen Reyna, TB survivor and advocate for Somos TB, told her story of contracting TB during pregnancy and beating it. Both speakers evoked a concept that Salfinger applied to TB several times during the conference: Never give up!

Ultimately, the conference reflected both the challenges and the momentum within TB laboratory science today. As technologies and testing systems continue to evolve, the meeting offered a valuable forum for laboratories to learn from one another, celebrate excellence and reaffirm their shared commitment to supporting TB prevention and elimination efforts through quality laboratory practice.

Thank you to all attendees and especially presenters and planning committee members for helping create an excellent conference! ■

CryptoNet

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investigations using molecular characterization have identified important differences between *Cryptosporidium* species and their associated exposures. In Nebraska, for example, *C. parvum* infections were more strongly associated with rural and animal exposures, while *C. hominis* infections were more closely linked to urban settings and childcare environments. Several childcare facilities were connected through the same subtype, suggesting broader community transmission. Findings like these illustrate the value of integrated molecular and epidemiologic surveillance. CryptoNet does not simply produce more data. It produces more actionable data, the kind that improves how public health identifies risk and responds.

Over time, the network has also helped identify zoonotic transmission and less common exposure pathways. Investigators have documented outbreaks involving wildlife, including raccoon-associated transmission among rehabilitation workers, while other investigations have highlighted environmental exposures that might otherwise have gone unrecognized. This broader visibility is one of CryptoNet's defining strengths. It not only helps

solve outbreaks. It helps public health recognize emerging risks earlier.

Technical, Communication and Workforce Advances

CryptoNet's scientific evolution has further strengthened its impact. Early work focused on genotyping and subtyping, building the foundation for molecular epidemiology. Today, advances in whole genome sequencing and whole genome multilocus sequence typing are improving the ability to differentiate recurrent and persistent subtypes of *C. hominis* and *C. parvum*. These advances allow for more precise characterization of transmission patterns and support stronger outbreak resolution. Importantly, these tools are most powerful when paired with epidemiologic data, reinforcing the importance of continued integration across disciplines.

Beyond technical advances, CryptoNet has played a critical role in translating findings into clear, actionable prevention messages: do not swim when sick with diarrhea; keep children with diarrhea out of childcare; practice hand hygiene after animal contact. These recommendations are grounded in years of surveillance and outbreak investigation and represent science translated into everyday action. This ability to connect data to prevention is one of public health's most important functions.

The network has also strengthened the national workforce. CryptoNet has supported training, standardization and collaboration across laboratorians, epidemiologists and bioinformatics partners. It has helped create a more consistent and connected approach to cryptosporidiosis surveillance. In doing so, it has shown that workforce development and surveillance modernization are closely linked—a strong network depends on skilled people who can generate, interpret and apply data across disciplines.

Looking Beyond the First Decade of Success

This milestone comes at a challenging time for public health. Resources are constrained, staffing is stretched and programs are being asked to do more with less. In this context, the value of surveillance can be overlooked. CryptoNet's success underscores why that perspective is risky. Without coordinated systems, outbreaks are harder to detect, harder to link and harder to control. Opportunities for early intervention may be missed, and prevention efforts may weaken over time.

CryptoNet demonstrates that collaboration works. Its success is not defined only by the number of outbreaks investigated or the size of its database. Its deeper value lies in its ability to connect laboratory science with epidemiological insight in ways that support action. It has improved outbreak detection, clarified transmission pathways and strengthened communication with the public. It has built a stronger foundation for response and prevention.

Looking ahead, continued progress will depend on sustained investment in sequencing capacity, bioinformatics and molecular epidemiology, as well as continued strengthening of laboratory and epidemiologic integration. The path forward builds on what the network has already demonstrated: that shared science, coordinated response and strong connectivity across partners are essential to effective public health.

CryptoNet began as a vision for improved molecular surveillance. More than a decade later, it stands as a model for how integrated, collaborative systems can protect communities. Its success reflects a simple but powerful principle. When laboratories, epidemiologists and partners work together, public health is stronger, and people are safer. ■

Uganda Ministry

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harmonized, and stored in the repository. The system is fully interoperable with Uganda's broader health information architecture, supporting clinical care, disease surveillance, program monitoring and national planning.

Ensuring Validation and Data Quality

A core component of the LDR's deployment was a structured validation process undertaken in collaboration with the Central Public Health Laboratories (CPHL), APHL and partners under the Global Public Health Data Innovation (GPHDI) initiative. Validation focused on harmonizing nomenclature, confirming data accuracy and completeness, and ensuring interoperability across systems such as IRRDS, ALIS and the National Data Warehouse.

Pilot testing at selected facilities verified turnaround time metrics, disease surveillance indicators, and dashboard visualization requirements. These exercises embedded quality checks, data flow monitoring, and standards-based integrations, ensuring that national-level analytics are built on trusted, reliable, and well-governed laboratory data. ■

Commissioners Paul Mbaka and Susan Nabadda looks on as Director Olalo Officially launches the LDR.

Bridging the Gap: How Technical Assistance is Modernizing AR Data Exchange

By **Gretl Glick**, MPH, lead specialist, **Mel Kourbage**, MA, lead specialist, and **Alyssa Mattson**, BAS, senior specialist, Informatics

Antimicrobial resistance (AR) remains a formidable challenge for the clinical and public health community, with over 2.8 million infections and 35,000 deaths reported in the United States annually.[1] For laboratory directors and informatics leads, the mandate is clear: the speed of data exchange is as critical as the accuracy of laboratory testing. In the fight against drug-resistant pathogens, the transition from manual reporting to seamless electronic data exchange is no longer a long-term goal—it is an operational necessity.

The Antimicrobial Resistance Laboratory Network (AR Lab Network) is comprised of laboratories in 50 states, as well as some cities and territories, including seven high-capacity testing and reference testing regional laboratories, and the National Tuberculosis Molecular Surveillance Center. APHL's AR Lab Network Technical Assistance (TA) Team provides specialized expertise to leverage laboratory informatics as a force multiplier for data sharing rather than as a bottleneck.

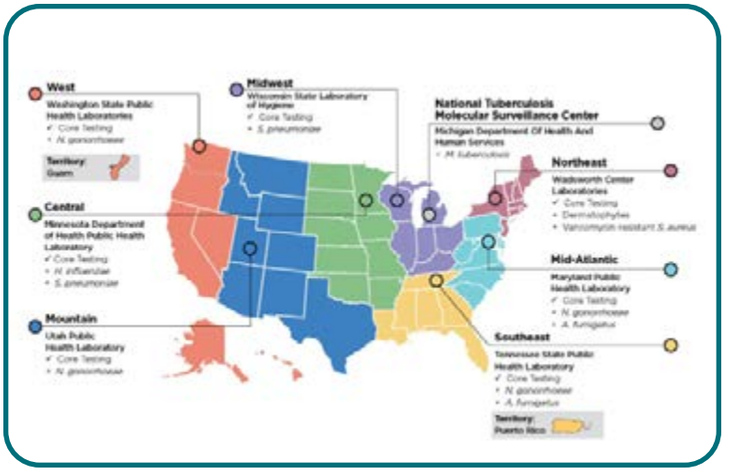
Supporting the Laboratory Workflow

The TA Team operates at the intersection of laboratory science and information technology, providing public health laboratories with the resources needed to standardize messaging for national reporting. By working directly with laboratory subject matter experts (SMEs), the team offers targeted support in four core domains:

- **Project Management & Business Analysis:** Identifying the specific resources, risks, and dependencies inherent in launching or maintaining electronic messaging streams.
- **Terminology Harmonization:** Assisting staff in mapping local laboratory codes to nationally recognized standards (such as LOINC and SNOMED). This ensures that laboratory information management systems (LIMS) are fully interoperable with federal and local partners.
- **Workflow Optimization:** Analyzing current laboratory and epidemiology workflows to determine the most efficient points for data capture and transmission.
- **Technical Architecture:** Providing the hands-on expertise required to implement technical solutions that meet rigorous data exchange requirements.

Impact in Action: Transitioning to ETOR

A key initiative for the AR Lab Network has been supporting the implementation of the Lab Web Portal (LWP). This solution facilitates electronic test order and result (ETOR) capabilities, which directly address the inefficiencies of paper-based submissions.



The AR Lab Network Regional Laboratories Map.

For laboratories, the benefits of this transition are measurable. By reducing manual entry and paper-based workflows, laboratories have seen results turnaround times drop from seven days to 48 hours. In the context of infection control and outbreak containment, this window is a critical metric for success.

2025 Impact by the Numbers

The scale of TA support reflects a nationwide commitment to modernization (**Figure 1**):

Milestone	Achievement
National Reach	**46** public health laboratories received TA for HL7 and CSV reporting streams.
System Automation	**20** public health laboratories successfully transitioned to automated HL7 reporting.
Infrastructure Modernization	**30** public health laboratories received guidance for complex LIMS upgrades and migrations.
Operational Continuity	**84** production issues were resolved through APHL-provided technical support.

Figure 1. Milestones achieved 2025–2026.

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Reference

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Behind the Numbers: How Newborn Screening Programs Are Using Data to Make the Case for Better Care

By **Sarah McKasson**, MPH, lead specialist, Data Science and Management, Newborn Screening and Genetics

Every year, millions of newborns across the United States are screened for serious, but treatable, disorders within days of birth. Test results from a dried blood spot can mean the difference between a child who thrives and one who faces lifelong complications, or worse. Newborn screening (NBS) is one of public health's quiet success stories. But for NBS staff, clinicians, policymakers and families who hold pieces of that system in their hands, the story is often hard to see.

That is changing.

The Newborn Screening Technical assistance and Evaluation Program (NewSTEPs), a program of APHL, has built a national infrastructure for NBS programs to collect and use data. Through a secure data repository, programs across the country contribute to three interconnected data streams, each telling a different part of the NBS story.

State profile dashboards are public and provide a broad view of each NBS program, including what disorders are screened, how the program is structured, screening fees and what policies are in place, helping programs and partners understand the current NBS landscape. Confirmed case dashboards bring the human dimension into focus, capturing the outcomes of newborns identified through screening and making visible the impact of a system that can be easy to take for granted.

The NewSTEPs Quality Indicator (QI) dashboards track eight standardized

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Save The Dates!

APHL Newborn Screening Symposium 2026

New Orleans

October 11–15, 2026 • New Orleans, LA

Registration Opens in July.

www.aphl.org/NBSS

#APHLNBS

Building Biorisk Management Across Public Health Laboratories: A Collaboration with the National Authority for Containment of Poliovirus

By **Michael Marsico**, program manager, Public Health Preparedness and Response

The US Centers for Disease Control and Prevention (CDC) National Authority for Containment of Poliovirus (NAC) was created in 2018 to implement a poliovirus containment program focused on reducing the risk of accidental release from facilities handling or storing poliovirus. Public health laboratories contributed to the initial phase of containment by reporting poliovirus materials as part of the national inventory survey. A key component of this program is biorisk management and implementation of stringent laboratory biocontainment measures to ensure that poliovirus materials collected, tested, destroyed or transferred are handled within a safe, secure and controlled environment.

ISO 35001: Biorisk management for laboratories and other related organisations defines a process to manage the risks associated with biological agents like poliovirus and is built on the concept of continual improvement, supporting a structured process for identifying, evaluating and mitigating biological risks helping laboratories operate safely, securely and in compliance with regulatory requirements.

Public health laboratories act as the first line of defense by detecting, identifying and monitoring all types of biological threats. These institutions must be prepared to mitigate and contain these risks to ensure the safety of laboratory staff, the public and the environment. For example, in July 2022, a public health response was launched after a confirmed case of poliovirus was detected in New York. The response included enhanced surveillance and collection of samples potentially containing poliovirus at the Wadsworth Center. With public health laboratories potentially receiving poliovirus or potentially infectious material (PIM) in stool, respiratory secretions and wastewater samples, it is essential for these institutions to support heightened biorisk management practices including those outlined in ISO 35001.

What Makes ISO 35001 Valuable?

- Offers a universal approach to identify and manage laboratory risk across various institutions
- Focuses on identifying, evaluating and mitigating biological hazards through a structured process
- Promotes continual improvement and integration of biosafety, biosecurity and quality management
- Supports regulatory compliance
- Builds culture of safety, trust and accountability at every organizational level

APHL/CDC ISO 35001 Implementation Project

APHL, in collaboration with CDC, have developed a strategy to provide guidance and support public health laboratories towards ISO 35001 implementation. Through this collaboration, public health laboratories have successfully been able to identify and mitigate biosafety and biosecurity risks in the workplace to reduce incidents, accidents, infections and illnesses that can result from laboratory operations.

The project consists of:

1. An initial site visit utilizing a gap analysis checklist to identify gaps in each institution's processes related to biorisk management
2. Virtual meetings to discuss and outline solutions towards ISO 35001 implementation
3. Additional site visits and collaborations to review and support implementation steps

The project helps participating institutions turn the principles of the standard into practice. Participating laboratories receive customized guidance, subject matter expert consultation, peer support and resources to guide them toward ISO 35001 implementation. To this date, APHL has successfully piloted the implementation of ISO 35001 across four public health laboratories and is currently onboarding two additional laboratories for implementation in 2026.

2026 APHL Biorisk Management Trainings

APHL Biorisk Management Workshop: APHL is planning an in-person training for public health laboratory biosafety professionals on biorisk management principles. The workshop will utilize lectures and exercises on key principles of biorisk management through interactive sessions.

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Impact of the Public Health Laboratory System Database

By **Lorelei Kurimski**, senior director, Quality Systems and Analytics and **Abigail Raymer**, specialist, Quality Systems and Analytics

Recently, APHL interviewed three public health laboratory directors—Deb Severson, BSMT, Fairfax County Health Department Laboratory; Victor Waddell, PhD, Arizona Bureau of State Laboratory Services; and Fengxiang Gao, MD, MPH, New Hampshire Public Health Laboratories—who are long-standing members of the Public Health Laboratory System Database (PHLSD) Task Force and who have guided the design and build-out of the system since its inception in 2018.

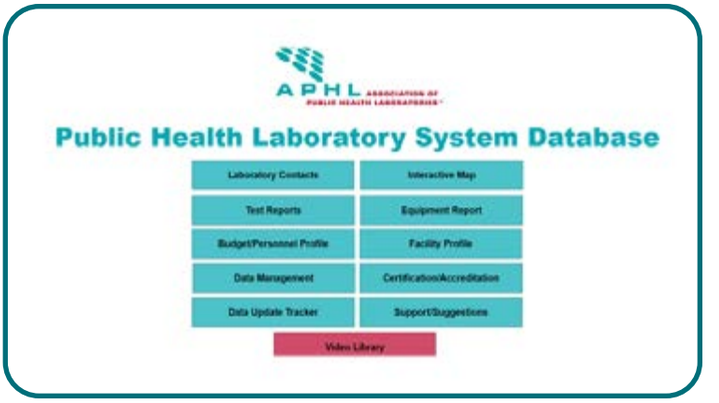
How is the taskforce ensuring the database remains relevant to APHL members?

Severson: The database continues to evolve and expand, incorporating additional relevant information for both local and state public health laboratories. It supports a wide range of laboratory disciplines, including clinical, environmental and agricultural testing, and also includes valuable demographic data such as certification status, budgetary details, personnel metrics and facility information—ensuring it remains a comprehensive and current resource.

Gao: The database remains relevant through continued participation by member laboratories, timely updates and widespread use of the system.

The PHLSD interactive map.

The PHLSD was developed to better serve APHL member laboratories. We encourage member laboratories to actively participate in the system and to update their information in a timely manner. At the same time, we should continue promoting the system and supporting member laboratories in updating their information with minimal effort.



The PHLSD's main menu.

Waddell: The database continues to grow and incorporate additional data from testing, instruments, and laboratory information management systems (LIMS) used. It is a very quick way to see which other laboratories are performing tests on the test system you are interested in. This way, you know which laboratory to contact to gather more information on this testing.

From your perspective, what do you think is the biggest benefit of having the database as a resource?

Gao: The biggest benefit of having the PHLSD as a resource is its support for effective planning. PHLSD resources are valuable for activities such as new method implementation—including method and equipment selection—as well as for planning collaborations or partnerships with other member laboratories. The database provides timely, relevant and trustworthy information that enables member laboratories to plan strategically and make well-informed decisions.

Waddell: It is a very fast way to see what other laboratories are doing, so you know who to connect with to gather more information and help you decide which new tests to bring on and which instruments to purchase.

Severson: The greatest benefit of the PHLSD is the breadth of information it provides and the ability to access that information quickly and efficiently when making laboratory decisions. The PHLSD serves as a centralized platform for laboratory information, allowing member laboratories to share and view detailed data with one another. In addition to providing convenient access to information, the database promotes collaboration among laboratories and supports the sharing of knowledge, resources, and capabilities across the public health laboratory network.

Can you share a recent example of how you have used the database to support your laboratory?

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Whole Genome Sequencing

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and Prevention (CDC) launched a statewide infection prevention and control initiative consisting of a series of educational webinars and a statewide roadshow. The goal of this initiative is to increase awareness of AR Lab Network testing available at Wadsworth Center and to reinforce the importance of infection prevention and control practices in reducing the spread of antimicrobial-resistant organisms in healthcare facilities. ■

Bridging the Gap

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Navigating a Resource-constrained Landscape

As laboratory departments face tightening budgets and competing informatics priorities, the TA Team provides the high-level expertise that local IT resources may not have the bandwidth to cover. Through individualized technical assistance, group cohorts and weekly office hours, the team ensures that laboratory staff gain the knowledge necessary to manage modern digital workflows.

By leveraging the AIMS Platform—a secure hub that validates and routes millions of messages monthly—the TA Team helps convert manual processes into standardized digital reality. This partnership empowers laboratory leadership to focus on high-complexity testing while securing the data infrastructure necessary to detect new resistance and protect public health. ■

Newborn Screening

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metrics that span the full arc of the screening process, from specimen collection to follow-up care. These include the rate of unsatisfactory specimens, the timeliness of collection, transport and reporting, and the percentage of infants lost to follow-up. Taken together, they tell a story about how well a system is working, and where it needs attention.

NewSTEPs did not want programs to just submit data into a black box. If programs were going to invest the time and effort to contribute, NewSTEPs wanted to give something meaningful back. The result was a suite of interactive, online dashboards that allow programs to monitor performance over time, benchmark against national and regional aggregates, and identify opportunities for improvement. This resource feels less like a reporting obligation and more like a mirror.

That visibility matters. NBS programs have used NewSTEPs dashboards to brief advisory boards, support grant applications, communicate program outcomes to partners, and advocate for resources. The data tells the story; the dashboard makes it legible.

Some programs have taken that principle directly to birthing facilities, the first link in the NBS chain. A handful of NBS programs have developed their own dashboards, drawing on NewSTEPs' QIs, to share performance data in formats that hospital staff can act on.

These tools are powerful for communicating the urgency of timeliness. When a nurse can see that a delayed specimen collection at their facility contributed to a slower result for a baby who needed one quickly, the abstract becomes concrete. The data stops being a statistic and starts being a story about a child whose care depended on timely screening.

Newborn screening is not alone in this challenge. Across public health, programs generate data that is critical, complex and chronically underleveraged as a communication tool. Dashboards and data visualizations are not just internal management tools, they are storytelling instruments that can turn a quality indicator into a case for investment, a timeliness metric into a conversation with a hospital, and a national dataset into a community's shared understanding of what is at stake. Every NBS program has a story worth telling.

For more information about NewSTEPs, visit newsteps.org. ■

Biorisk Management

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APHL BioSafe 360 Program: This remote-based program is designed to connect biosafety, biosecurity and quality management under one cohesive framework outlined in ISO 35001. The program applies the Plan-Do-Check-Act methodology and high-reliability organization concepts from ISO 35001 to strengthen risk mitigation, learning and system-based corrective action.

Biorisk management practices outlined in ISO 35001 demonstrate an institution wide commitment to safety. APHL, in collaboration with NAC, will continue to promote and showcase the value of ISO 35001 practices across the public health laboratory community.

Contact: biosafety@aphl.org for more information on the APHL/CDC ISO 35001 Implementation Project or other biorisk management trainings. ■

PHL System Database

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Waddell: We used the PHLSD to review the types of instrumentation other public health laboratories had acquired, in particular RT-PCR instruments, to help us decide which instruments to acquire.

Severson: Most recently, we used the PHLSD to research document control systems, LIMS and laboratory equipment. Specifically, we gathered information on laboratories utilizing the DiaSorin Liaison XL platform for QuantiFERON-TB (QFT) testing.

Gao: Most recently, we have been working on a contract with CliniSys to migrate our LIMS to the Cloud. While migrating LIMS to the Cloud is an increasingly common trend, the increased cost remains a challenge. To support our decision making, I searched the PHLSD and found that 24 public health laboratories currently use CliniSys LIMS. We reached out to those laboratories, and one laboratory that had completed the Cloud migration shared its experience with us.

For more information, contact phlsd@aphl.org. ■

Introducing the **Human & Animal Food Laboratory Professionals Curriculum Framework**

The Laboratory Curriculum Framework is a competency-based curriculum framework — a career-spanning, visual schematic — for human and animal food laboratory professionals. The framework is being used for:

- Training development
  courses and other learning events
- Cataloging existing training
- Career development
- Competency assessment

The goal of this framework is to foster a competent workforce trained to a consistent standard. While this framework was originally created for analysts working in human and animal food laboratories, many competencies and training materials have a broader reach.

Learn more and start using the framework and evaluation tools at **www.aphl.org/HAFL-Framework**

Framework Levels

The framework spans four professional levels (entry, mid, expert and director), and depicts the content areas in which laboratory professionals must possess competencies (i.e., knowledge, skills, abilities, behaviors and attributes) in order to successfully perform their job functions.

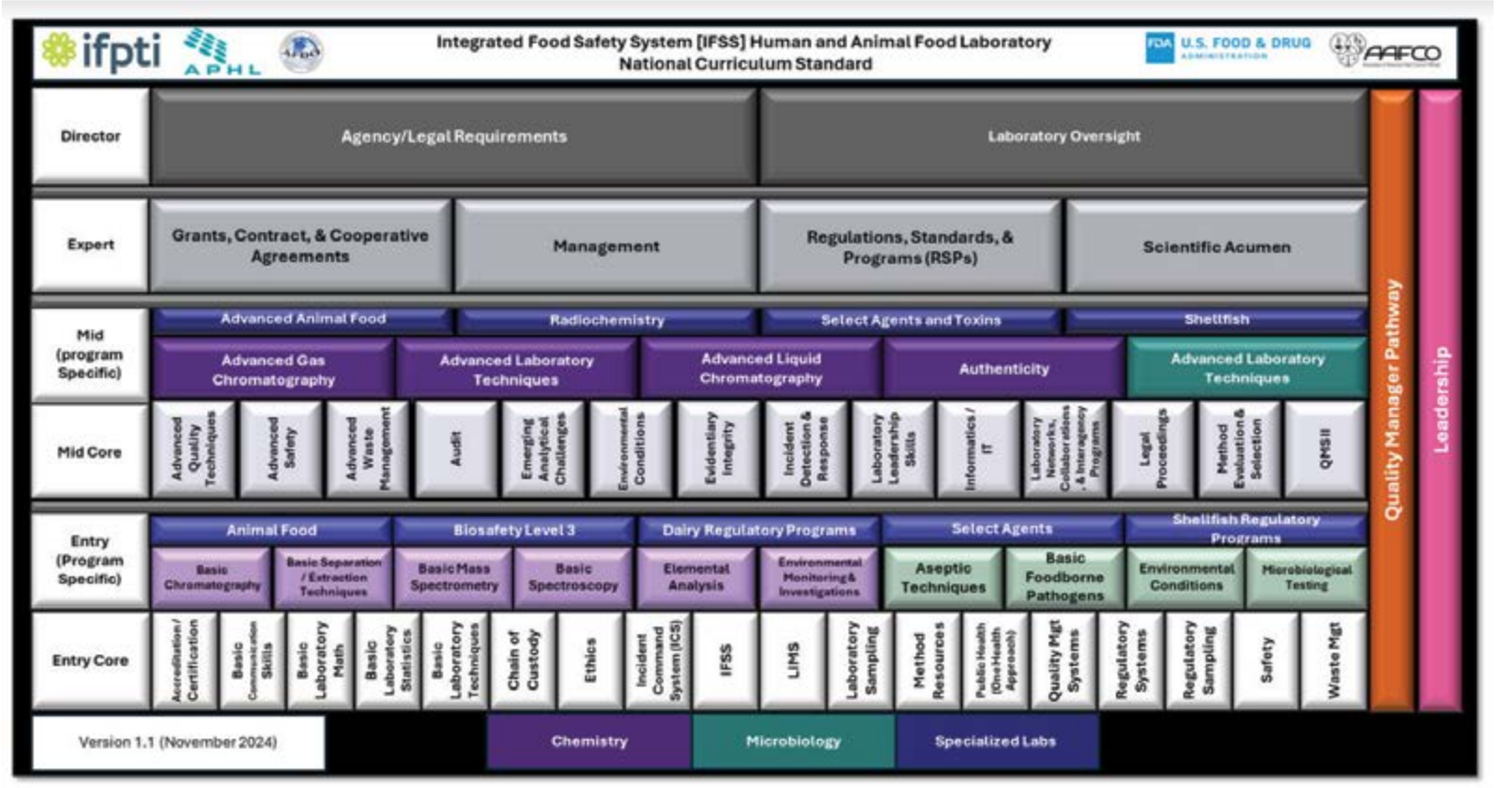
Building Analyst Competency

The framework outlines the competencies that laboratorians should possess in various stages of their career and in various disciplines (Microbiology, Chemistry, Specialized Testing). You can use these competencies to determine where you or your supervisee have knowledge gaps and identify learning resources to gain these competencies.

Competencies List: **www.ifpti.org/ncs-lab-competencies**
Interactive Framework: **www.ifpti.org/ifss-lab**

Training Available

Competency-based training courses are currently in development to complement the curriculum framework. These courses can be found on APHL's Learning Portal at **learn.aphl.org/learn**.



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