CASE STUDY

LSU Health- Shreveport

Industry: Clinical Diagnostics
Client Since: 2020
Location: Shreveport, LA

LabLynx LIMS Helped Louisiana State University Health Shreveport Roll Out Large Volumes of Testing in Early Days of Pandemic

Overview

No other group was as hard hit during COVID-19 as the elderly. Especially vulnerable were those in nursing homes and long-term care facilities, where they lived in close proximity to others and where the coronavirus was hard to contain. In some facilities, many residents and staff members were wiped out by the coronavirus.

Making the situation even worse, to contain the virus, elderly residents living in assisted living and nursing homes were typically cut off from in-person contact with family and friends in an attempt to keep the virus from spreading. Testing was a crucial component employed by public health officials to limit the spread of the virus. Those testing positive were advised to quarantine to help control COVID-19.

Still, more than 540,000 of the 1.05 million persons who died from COVID-19 in the US since 2020 have been over age 75, according to data from the Centers for Disease Control and Prevention (CDC). Of the total number of deaths reported as of September 21, 2022, the data shows that more than 150,000 deaths from COVID-19 occurred in nursing homes or long-term care facilities.

Louisiana, just as every other state in the US, as well as localities across the globe, had to act fast to manage the pandemic. The Louisiana Department of Health (LDH) needed to test residents in nursing homes throughout the state so that patients with the coronavirus could be quarantined from other residents. Partnering with Louisiana State University Health Shreveport (LSUHS) was crucial to support LDH's testing and surveillance missions.

The Emerging Viral Threat (EVT) Lab, the new reference lab established at LSUHS in March of 2020 to address the need for faster detection and processing of COVID-19 tests, was able to get off the ground and begin partnering with LDH in less than two weeks, in part thanks to LabLynx LIMS. Jarrod Sawyer, research data and applications project manager at LSU Health Shreveport, who's been a software developer for 11 years, was there in the beginning as the lab first began testing.

More than two years later, the Clinical Laboratory Improvement Amendments (CLIA)- and College of American Pathologists (CAP)-accredited lab has performed more than 730,000 polymerase chain reaction (PCR) tests. PCR is a type of test that detects genetic material from a specific organism, such as a virus, that is present at the time of the test.

LabLynx's laboratory information management system (LIMS) software not only helped the lab to process more volume during the height of the pandemic, but it also gave the lab the flexibility to pivot with changing public health needs as directed by the LDH. Since its opening, the lab has transitioned from processing tests for nursing homes to having a robust community-based testing program and is the only academic medical center awarded one of three contracts by LDH to administer testing in K-12 schools in 34 Louisiana parishes. More recently, the lab has been preparing to test for a new threat in monkeypox, an infectious viral disease that can affect both humans and animals.

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Implementing the LabLynx LIMS was a fast process

The lab originally used research software that lets you build forms, but it wasn't built to be a LIMS. Sawyer said that he and another software developer were brought onboard to automate a lot of the software processing. "The system we were using was not meeting our needs, and it was not compliant with regulations, so we had to find a commercial LIMS," Sawyer said.

LabLynx LIMS was chosen in this instance because after reaching out to multiple companies, LabLynx was the only company that responded. Dr. Paul Weinberger and Dr. John Vanchiere, both from LSU Health Shreveport, worked closely with John Jones, CEO of LabLynx, to integrate the LIMS software, said Sawyer. "There were a lot of customizations as far as COVID, and the processing and trying to mass process without a lot of resources on our side."

LabLynx LIMS was integrated with testing equipment, and the software's customer portal option was also set up so that nursing home staff could get test results for their residents quickly.

Out of necessity, the LIMS rollout needed to take place quickly. "It was stood up from nothing to have it up and running and processing tests in a month and a half or two months," said Sawyer. Public "I think the first test we processed using LIMS was July 13, 2020."

"Our timelines haven't always been forgiving. LabLynx adapted to that, and they've been very quick to get things done. They've always been there when we've had any issues, fixing problems within hours rather than days."

"Probably one of the biggest things I can say about LabLynx and working with them at that time is that they were very responsive. One of the main reasons that we were able to get the EVT Lab set up so quickly is because they were really focusing on it. The responsiveness was there and the customer care was there. It wasn't like we were just set out on our own," Sawyer said.

Were there problems to solve? Sawyer said, "Of course we had some problems, but that was to be expected. It went as smoothly as a software rollout can go, when you're working with that kind of timeline."

"Our timelines haven't always been forgiving," Sawyer added, emphasizing the nature of the pandemic and the large testing volume placed on the lab. "LabLynx adapted to that, and they've been very quick to get things done. They've always been there when we've had any issues, fixing problems within hours rather than days."

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LabLynx LIMS helped the lab handle large volumes of tests at the height of the pandemic, while providing other benefits

Due to the efficiency LabLynx LIMS has added to the testing process, the EVT Lab was able to process large volumes of tests quickly during the height of the pandemic with a relatively small staff. But the LIMS also helped to improve speed and accuracy while providing the lab flexibility to pivot quickly with changing public health risks into the future.

One of the lab's main requirements, according to Sawyer, was the ability to deliver results to the people who were tested through their nursing home administrators or physicians. The customer portal solved that problem. "The portal removes a lot of the burden off staff, and it also leaves less room for any HIPAA issues as well," Sawyer said.

Explaining how the process works, he said, "As a machine outputs results to a CSV file, the LIMS picks those files up, reads them, and inputs all the data. Of course, we still have staff that reviews everything to make sure it's correct, but LIMS automates the process so that our staff doesn't have to go in and manually type results, a process that can be error-prone."

Regarding speed, even when testing volume was really high, Sawyer said the EVT Lab was able to maintain turnaround times (TAT) of less than 48 hours, in most instances with TAT of 36 hours to 24 hours or less.

Another satisfied LabLynx LIMS customer

Flexibility proved an equally important benefit of the LabLynx LIMS. "As we're starting to come out of one public health threat into another such as monkeypox, the flexibility of the LIMS is helpful. We can build out tests, validate things, and configure the software for different testing processes ourselves without additional support from LabLynx," Sawyer said.

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