



Laboratory Steps Up

Collaboration, Communication and Partnership

Wyoming Public Health Laboratory takes critical role in COVID fight.

BY GAYLE M. IRWIN





Top: Wyoming Public Health Laboratory Technician Wesley Nietfeld pipettes manufactured viral transport media (VTM) into tubes.

Bottom: Chemical Testing Manager Joseph Reed, PhD, displays tubes of (VTM) that were manufactured at the lab. The Wyoming Public Health Laboratory has manufactured about 50% of all distributed VTM—165,000 tubes. Since the start of the pandemic, the laboratory has been distributing SARS-CoV-2 specimen collection materials across the state.

Left: A specialized instrument ensures the caps of tubes (VTM) are securely in place for transport across the state.

Amid 2020's unprecedented coronavirus health crisis, the Wyoming Public Health Laboratory, which is part of the Wyoming Department of Health, stepped up to battle a brand-new opponent. Months later, the crew was still at work.

"We've taken on new and unusual responsibilities," said Cari Roark Sloma, PhD, D(ABMM), director of the laboratory. "Not only did we have to bring on testing, but we had to be able to sustain unprecedented testing volumes."

Speeding up the fight

The lab tests about 50 percent of COVID-19 specimens in the state, completing nearly 1,000 per day, Director Sloma said. Staff work hours increased significantly, from 8 a.m. to 5 p.m. five days per week, to 8 a.m. to 11 p.m. seven days per week.

"We know we are making history, but we also know this is really difficult and exhausting. No one knew it would be this kind of grind," Director Sloma said.

Several other changes transpired to meet such demand, including growing staff from nine to 40, she said. New equipment was purchased as well.

"We were able to purchase a number of pieces of equipment that were exactly like ones we had. We also purchased new instrumentation," she said. "Some of these instruments allow for extraction of viral RNA from the patient sample and others are used for amplification of the RNA using Real-Time RT-PCR."

A change in how data is collected and distributed also occurred. Staff exchanged the old paper-based ordering system for a web portal to increase speed and efficiency.

"It's one of our most important success stories," Director Sloma said. "When manual data entry went away, we were able to process so much more."

Another problem, this one involving specimen collection kits, was resolved as well. Early in the response Wyoming had difficulty obtaining swabs and viral transport media (VTM); however, the lab's chemical testing program solved the situation, Director Sloma said.

"Everybody in the world needed swabs and VTM, and not enough was made by manufacturers at the time to support those needs," she said. "Our chemical testing program took on the task of coming up with a recipe based on the CDC (Centers for Disease Control and Prevention) recipe for VTM. So we began making VTM to support the entire state."

These public health workers proved collaboration, communication and partnership can produce positive results.

"People have been incredibly adaptable, researching the science, understanding the science and applying that to our



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Wyoming Public Health Laboratory Director Cari Roark Sloma, PhD, D(ABMM).

response,” said Alexia Harrist, MD, PhD. Dr. Harrist is the state public health officer, state epidemiologist and oversees the state lab.

“I think we have a good setup here to have really important collaboration between the laboratory and the epidemiology pieces, which are so critical to responding to this pandemic. It’s really a great partnership in making sure that everyone is getting the information they need and collaborating to share the information we all need.”

Communication is critical

Such traits outside the lab also play critical roles in Wyoming’s fight against COVID-19. For example, Dr. Harrist works closely with Governor Mark Gordon’s office.

“The lines of communication between the health department and the governor’s office are wide open, and there is communication happening every day,” Dr. Harrist said. “We have a meeting with the governor’s office once a week.”

She also speaks frequently with county health officers and representatives of other state agencies.

“Communication is as critical or more critical at this stage of the pandemic as ever,” she said.

Director Sloma agreed and said that support from the governor’s office and from her Wyoming Health Department colleagues has been vital to the lab’s work.

“We’ve been funded 100 percent,” she said. “Our governor has been truly supportive of what we have asked for, and we have the right people in our administration in the department of health. This would have been so much harder if we hadn’t had the amazing support of Dr. Harrist and the entire department of health administration and the governor.”

Prepared for a surge

Actions taken early in the year exemplified the need for preparation as COVID cases climbed from five and 10 per day early on to an average of more than 200 per day in October.

“I think the actions we took [in the spring] were incredibly helpful for us to be prepared for this surge,” Dr. Harrist said. “Testing is much more available now. We have better supplies of personal protective equipment to protect our healthcare providers and our first responders. Healthcare providers are more familiar with COVID and have more tools to identify and treat patients.”

As cold temperatures and snowfall set in and the flu season is injected into the COVID crisis, health department workers brace for a new game. Dr. Harrist calls the situation “worrisome.”

“Flu season is certainly a concern. Influenza can also be a serious virus like COVID—it can cause hospitalizations, it can cause death, so the things that we were really worried about, overwhelming our hospital capacity, outbreaks and deaths among vulnerable residents, including those in long term care facilities, could all be exacerbated by flu. But we know, seeing data from the southern hemisphere in particular, that likely the same measures that help protect against COVID spread also protect against flu spread.”

Director Sloma assured physicians that they would not have to worry about test quality or timely results.

“We switched from the original CDC SARS-CoV-2 assay to the SARS Influenza and SARS-CoV-2 multiplex assay,” she said. “That change allowed us to increase the throughput dramatically because of the design of the multiplex assay. So now that we are running an Influenza/SARS-CoV-2 assay, we can process a lot more specimens in a single day. In a normal world, people usually don’t get tested for the flu unless they’re symptomatic. Now, whether the patient is symptomatic or not, they’re getting a SARS-COV-2 test and a flu test. So we’re going to get some really interesting information on when influenza starts to spread through our population.”

Dr. Harrist acknowledged the importance of continued partnership between entities.

“I just want to thank all the providers out there,” she said. “Our labs can’t do anything without the providers. We appreciate their feedback. We appreciate their patience as we’re all learning about this virus together. I just want to express my gratitude for being on the front lines, taking care of patients and working with us as much as they have.” 