

COVID-19 test shortage: How a clinic stayed local for solutions

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Considering the constantly moving pieces associated with this pandemic, Hattiesburg Clinic knew they had to plan for the arrival of COVID-19. Partnering with the local Forrest General Hospital, their priority was to transform one of the immediate care facilities into a cough and fever clinic to evaluate patients with symptoms of COVID-19. However, after seeing 143 patients on the first day, the clinic was facing a shortage of COVID-19 test kits.

Working with research scientists at the University of Southern Mississippi, they were able to create their own test kits, increasing the supply by a multiple of 10.

“The virus has unleashed a spectacular spirit of cooperation and creativity in our community,” said John Fitzpatrick, MD, nephrologist and president of Hattiesburg Clinic, the largest private multi-specialty clinic in Mississippi and an AMA Health System Program Partner. “Medical leaders are working with the city, the research labs at the University of Southern Mississippi and our local military base to prepare.”

Determining the need

“Testing requires a flocked swab made of synthetic material of which we had more than 1,000 in stock,” said Dr. Fitzpatrick. “However, we had only 200 tubes containing viral transport medium (VTM). We were concerned that we may run out of testing tubes within the first few days of opening the Cough and Fever Clinic.”

After Dr. Fitzpatrick received the VTM recipe from his daughter, Karla Perrizo, MD, a pathologist at the University of Mississippi Medical Center in Jackson, he realized he could make it himself.

“It was almost identical to a medium I made monthly for three years in an immunology lab when I was a nephrology fellow at Boston University Medical Center almost 30 years ago,” he said.

This started his journey to finding the ingredients to make the VTM to continue to provide testing for COVID-19.

Developing the recipe

Dr. Fitzpatrick asked the CEO of Forrest General Hospital Andy Woodard if the pharmacy had the ingredients necessary for the VTM. Unfortunately, they did not. The next day, he visited the University of Southern Mississippi to meet with Gordon Cannon, PhD, vice president for research, and Mohamed Elasri, PhD, director of the Center for Molecular and Cellular Biosciences. faculty at the Biological Sciences Department.

“In preparation for that visit, I wrote down all the items needed on a whiteboard to make one liter of VTM,” said Dr. Fitzpatrick, adding that “one liter would be enough for 333 tubes.”

While meeting with the team of research scientists at the university, Dr. Fitzpatrick held up his whiteboard and asked if they had the ingredients for the VTM.

“Within two minutes they told me they had everything, including the appropriate laminar flow hood to make the medium under sterile conditions,” said Dr. Fitzpatrick, adding that after understanding the amount of ingredients they had, he “immediately knew they had enough to make almost 10,000 tubes containing VTM.”

That same day, the team at the University of Southern Mississippi (USM) made 200 tubes to assist in testing for COVID-19.

Working with state health department

However, having the tubes with VTM was not enough. Because the initial testing of COVID-19 occurred at the Mississippi State Department of Health (MSDH) located in Jackson, Mississippi, Dr. Fitzpatrick needed to have MSDH on board to accept the VTM.

“We called the state lab to see if they would test duplicate samples from three patients to validate the VTM,” said Dr. Fitzpatrick. “Given the surging demand for testing, the MSDH—not surprisingly—did not want to waste slots for duplicate testing.”

“Given the highs of the morning, this was somewhat deflating,” he said. “There was not much use having VTM if the testing lab would not accept it.”

Dr. Fitzpatrick and the USM team went back to the drawing board for a different approach. They decided to do pilot testing of the polymerase chain reaction (PCR) test for the COVID-19 virus at the University of Southern Mississippi, using the VTM. These results proved that the VTM was reliable. The PCR test results also matched the MSDH test results.

After review of the recipe for VTM and the university’s demonstration of reliability, the MSDH agreed to accept it for testing.

“We had now resolved our tube shortage issue, which was threatening our ability to do COVID-19 testing,” said Dr. Fitzpatrick. “To date, University of Southern Mississippi has made almost 2,000 tubes for Hattiesburg Clinic and Forrest General Hospital” and is now making “VTM for other parts of the state to expand testing.”

“A local solution sourcing strategy might work in other communities like ours across the country,” he said, adding that “it is impressive that” the University of Mississippi Medical Center, Hattiesburg Clinic, Forrest General Hospital, University of Southern Mississippi, Mississippi State Department of Health and Wesley Medical Center “can work cooperatively together during this crisis, when just two weeks ago some of them may have been competitors.”

The AMA has developed a COVID-19 resource center as well as a physician’s guide to COVID-19 to give doctors a comprehensive place to find the latest resources and updates from the Centers for Disease Control and Prevention and the World Health Organization.

Additionally, the AMA’s COVID-19 FAQ will help physicians address patient concerns and offers advice on key issues such as testing patients.