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Services and support

A hospital lab in China accelerated its response to SARS-CoV-2 with the support of a dedicated Thermo Fisher Scientific FSE

Meng Zhang is a Field Service Engineer (FSE) based in Northeast China. Zhang has been with Thermo Fisher for five years, specializing in servicing qPCR, CE, and NGS instruments, as well as flow cytometers, imaging systems, and nucleic acid purification systems. In early 2020, as the SARS-CoV-2 virus first began to spread, a clinical lab at a large hospital in Northeast China needed to quickly pivot to large-scale testing. While the lab was already proficient in quickly and accurately detecting nucleic acid from human samples using the Applied Biosystems™ 7500 Fast Dx Real-Time PCR System, the scale-up required the installation of an additional instrument. Although it involved risk, Zhang went above and beyond for the lab, insisting on doing the installation in person to help ensure the integrity of the customers' results.

Because of such dedication, Zhang was recently nominated by one of his colleagues and honored by Thermo Fisher as a Guardian of Your Science—a member of the Services and Support team providing excellent customer support. To learn more about Zhang's support of the hospital's effort to provide large-scale SARS-CoV-2 testing, we reached out to the hospital's laboratory technician who was Zhang's main point of contact. She and Zhang discussed their collaboration with us:



Meng Zhang, Thermo Fisher Field Service Engineer, China

Can you tell us about yourself and your lab?

Lab technician: I joined the staff of a large hospital in a major city in 2019. We focus on infectious diseases. I was hired to do basic disease detection: for example, tuberculosis. Then, as you know, in 2020 the pandemic broke out, so soon after I joined the hospital, most of the work I needed to do was in COVID-19 detection. We never imagined we would have such a big workload, but now we had thousands of samples that needed to be processed every day.



Nucleic acid extraction from patient samples with the KingFisher Flex Purification System.

Prior to the pandemic, what was your experience working with Thermo Fisher?

Lab technician: In our lab, we had two 7500 systems, but our daily tasks only occasionally involved using qPCR.

Meng, do you remember getting the call from the hospital about installing the new 7500 system in their clinical lab?

Meng Zhang: Yes, the call came in from the service administrator telling me that there was a 7500 system that needed to be installed in that hospital. I knew that hospital meant a lot to the country since it's known for dealing with infectious diseases. I immediately contacted the lab technician, who was my point of contact for the service call, and we arranged the installation.

Lab technician: When Meng was called in, the room we were working in was quite simple. We did both the nucleic acid extraction and detection in the same room. The lab managers hoped that Meng could do the installation remotely, so he could avoid getting infected.

Meng Zhang: That was the first thing I noticed: the Thermo Scientific™ KingFisher™ Flex Purification Systems—the nucleic acid extraction instruments—were in the same room with the qPCR instruments. This was not an ideal situation in terms of regulation and potential danger to both the lab workers and technicians like me.

Even though I was told that I could do the installation without entering the lab, after assessing the situation and thinking about it, I decided I really had to do the validation hands-on. It's a clinical lab, so there was critical installation work as well as validation work that had to be done, so I told the customers that I'd go in. I hadn't heard of anyone in that lab getting infected, so that was part of the reasoning behind my actions.

Lab technician: Meng took on the responsibility. He said that he would like to perform the installation inside the clinical lab to help us avoid impact to instrument performance from movement. This left a deep impression on my colleague and me because we could see that he was really dedicated to his work.

If I contacted Meng with any questions about the instruments or results, he always responded in a very timely manner, which gave me the impression that I was not working alone.

Meng, can you discuss those concerns that drove you to do the installation in person?

Meng Zhang: Yes, without getting too technical, the 7500 system is a very sophisticated instrument with an optical system inside that works well but is quite sensitive to movement. The lamp in this optical system could easily be rocked during the installation process, which could compromise the lab's results, so that's why I insisted on doing the installation inside.

On top of that, the instrument had to be validated by certified personnel because we need to make sure it meets our high performance standards—in this case for a clinical lab that was critical for monitoring the spread of the SARS-CoV-2 virus.

What measures were you and the lab workers taking to protect yourselves while working with these samples?

Meng Zhang: Layers of protection: a PPE suit.

Was that your first time working in conditions like that? Was it unusual for you?

Meng Zhang: No, that was not the first time. I'd worked in several CDC labs. You learn to deal with it.

As an FSE, I had worked with KingFisher instruments a lot. Nucleic acid extraction can be dangerous because the instrument comes in direct contact with the nucleic acid. You need to be protected, just in case. However, although this was not my first time working in full PPE, it was definitely a bit more dramatic because of the importance of that hospital and the virus.

We would also be interested in hearing the lab tech's experience: did you face any safety challenges?

Lab technician: We don't worry too much about safety because we have very strict regulations on how to deal with the samples, and all the nucleic acid we extract is inactivated. Lab technicians have to wear masks and clean PPE.

The biggest challenge for us was the heavy workload due to the large number of COVID-19 patients entering the hospital, including heavily infected patients with severe symptoms. So, the major challenge for us was having to work long days, which was tiring.

The 7500 system has a good reputation in the industry. Our instruments run smoothly, and the results are very reliable. Lab productivity increased because of the additional instrument and thanks to Meng.

Has the 7500 system that Meng installed helped increase your lab's productivity?

Lab technician: The 7500 system has a good reputation in the industry. Our instruments run smoothly, and the results are very reliable. Lab productivity increased because of the additional instrument and thanks to Meng.

To elaborate on that point, what impressed me most was Meng's attitude. For example, when I had to work late or even on weekends, if I contacted Meng with any questions about the instruments or results, he always responded in a very timely manner, which gave me the impression that I was not working alone.

Would you recommend Thermo Fisher Global Support Services to other labs?

Lab technician: In our lab, we often discuss the products and service provided by different instrument manufacturers. We have a deeply positive impression of Meng because he's very professional in his work and very fluent in English, so we would definitely recommend him and Thermo Fisher to colleagues. We continue to collaborate with him often because we are using qPCR much more frequently than before.

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