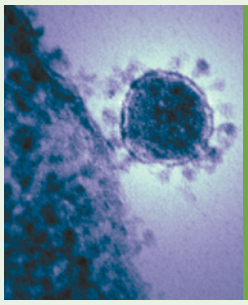
The PHEP cooperative agreement is instrumental in ensuring a successful response infrastructure is in place to afford public health laboratories the ability to accommodate sudden increases in testing for both established and novel emerging threats.

Florida Public Health Lab Works Around the Clock to Diagnose MERS

The Middle East Respiratory Syndrome (MERS) causes severe illness and even death. This viral respiratory illness is new to humans and was first reported in Saudi Arabia in 2012. The virus spread globally, and the first case was confirmed in the United States on May 2, 2014. During the two years between initial identification of MERS and the first U.S. case, federal, state, and local health departments worked diligently to ensure the illness could be quickly detected, diagnosed, treated, and contained. Diagnostic capabilities within our public health laboratories were essential to these preparations.



An electron micrograph photo of a single Middle East Respiratory Syndrome Coronavirus (MERS-CoV) virion.

On June 5, 2013, the Food and Drug Administration authorized emergency use of a CDC test for MERS in clinical respiratory, blood, and stool specimens. The Florida Bureau of Public Health Laboratories (BPHL) was among the first state public health labs to receive this test. Over the next nine months the laboratory tested specimens for seven cases that met the MERS case criteria. Using PHEP funds, BPHL's information technology staff also updated the lab's Laboratory Information Management System (LIMS) to ensure accurate reporting to CDC.

A week after the first U.S. MERS case was diagnosed in Indiana, the Florida State Investigations Unit manager and epidemiologist alerted BPHL-Tampa that there was an Orlando hospital patient suspected of having MERS. The patient's blood and respiratory samples arrived at the Tampa lab at 5 p.m. Friday, May 9. Lab staff, in consultation with CDC subject matter experts, worked over the next 30 hours to confirm that the U.S. was likely facing its second case of MERS. This work included obtaining additional clinical samples from the patient to conduct multiple testing methods. CDC lab staff confirmed the MERS diagnosis by 10:45 p.m. on Sunday, May 11.

Advanced preparations by the Tampa public health lab ensured that when called upon, it was ready to respond. On Monday, May 12, after demonstrating success in diagnosing MERS, the lab received about 25 samples from close contacts of the Orlando hospital patient. Also, as news of the diagnosis spread through the community, the Tampa lab experienced an increase in additional samples for testing. All patients symptomatic with respiratory illness that met the case definition were tested to rule out MERS. The BPHL-Tampa lab tested more than 130 samples for MERS in the weeks following the confirmation of MERS in Florida.

The MERS event required well trained staff, testing agents, and adequate testing equipment. The PHEP cooperative agreement is instrumental in ensuring a successful response infrastructure is in place to afford public health laboratories the ability to accommodate sudden increases in testing for both established and novel emerging threats.