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Is your Laboratory a Sentinel Laboratory and a member of the South Carolina Sentinel Laboratory Network (SCSLN)?

How do you know if your laboratory is part of the South Carolina Sentinel Laboratory Network (SCSLN)? Is your laboratory capable of analyzing or referring specimens to other laboratories that may contain bioterrorism agents? If you answered yes, then you are a member of the SCSLN and are considered a sentinel laboratory by the larger Laboratory Response Network (LRN). Sentinel Laboratories play a key role in the early detection of biological agents. Each sentinel laboratory's role in the network is determined by their testing capabilities.

The SCSLN is coordinated by the Special Pathogen Laboratory, which is part of the Microbiology Division at the Bureau of Laboratories (BOL), and is a network formed by the state public health laboratory and the clinical laboratories located in South



Carolina. The purpose of the sentinel network is to actively communicate, engage, and partner a relationship between the BOL and clinical laboratories in our state. The network allows the BOL to provide training on current rule-out procedures for select agents, packaging and shipping infectious substances, and provides a way to rapidly disseminate information to sentinel laboratories in the event of a public health emergency.

Laboratories that receive and test specimens that may contain select agents must have the ability to first recognize the suspicious isolate and then either rule out or refer the isolate to the Special Pathogens laboratory at the BOL. The laboratory must be aware of the LRN notification procedures and have personnel properly trained in packaging and shipping infectious substances. They must participate in proficiency testing exercises such as the CAP Laboratory Preparedness Exercise (LPX) or other state-developed proficiency events.

As a Reference Laboratory in the LRN, the BOL is responsible for maintaining a database that contains primary and secondary contact names, phone numbers, and email addresses as well as the testing capabilities of each sentinel laboratory. This database is the primary method of communication between the BOL and sentinel laboratories.

Public health and emergency response agencies rely on both the BOL and sentinel laboratories to rapidly transport and accurately detect, identify, and confirm select agents in the event of an emergency. The SCSLN helps build and maintain strong relationships at the state and sentinel laboratory levels and is crucial in accomplishing the primary function of the LRN: rapid detection and reporting of suspected bioterrorism agents.

2015 South Carolina Sentinel Laboratory Summit

The Bureau of Laboratories (BOL) hosted the 2015 South Carolina Sentinel Laboratory Summit on March 19, 2015 at the South Carolina Archives and History Center. Eighteen participants from 11 hospitals attended the summit. Attendees were awarded continuing education credit hours through the ASCP. Speakers from various backgrounds spoke on a variety of topics that included biological terrorism, biosafety and security, Ebola, and Influenza.

Mrs. Amanda Moore, Supervisor of the Special Pathogens laboratory at the BOL, discussed the American Society for Microbiology (ASM) sentinel laboratory procedures and the CAP Laboratory Preparedness exercises (LPX) and state preparedness exercises.

Dr. Jennifer Meredith, PhD, HCLD (ABB), Clinical Microbiology Director - Greenville Memorial Hospital, reviewed the hospital laboratory's role in Ebola preparedness, to include point of care testing, personal protective equipment, hospital processes, and waste management.

Dr. Eric Brenner of the USC Arnold School of Public Health spoke about the Influenza Virus and shared some interesting facts and information from a public health and epidemiology standpoint.

Ms. Shoolah Escott, MS, MT (ASCP), Health Scientist from the CDC, discussed the importance of Biosafety/Biosecurity in the laboratory.

In addition to the Sentinel Summit on March 19, a free one-day course in Biosafety/Biosecurity was offered on Friday, March 20th by Ms. Escott. The highlights of the course included a review of the relationship between biosafety and biosecurity, discussions and activities to illustrate the use of BSL-3 practices in a BSL-2 laboratory, and the application of the risk assessment processes for both biosafety and biosecurity. The course was well received and garnered additional inquiries for the next training.

Useful Links

South Carolina 2015 Laboratory Reporting List

www.scdhec.gov/Library/CR-009036.pdf

Sentinel Level Clinical Laboratory Protocols for Suspected Biological Threat Agents and Emerging Infectious Diseases

www.asm.org/index.php/guidelines/sentinel-guidelines

Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition

www.cdc.gov/biosafety/publications/bmb15



The Featured Petri Dish laboratory is the Special Pathogens Laboratory!

The Special Pathogens laboratory at the South Carolina Bureau of Laboratories (BOL) is the LRN Reference Laboratory in South Carolina. The Special Pathogens Laboratory maintains the capability to respond to public health emergencies involving select agents on a twenty-four hour basis. The laboratory works directly with law enforcement, local, state, and federal agencies to ensure rapid response times.

The laboratory is one of four Biosafety Level 3 (BSL-3) laboratories at the BOL and can perform testing for suspected agents of bioterrorism in both clinical and environmental specimens. Special Pathogens utilizes testing procedures developed by the CDC to analyze specimens exhibiting colony morphology and biochemical testing consistent with a select agent by Real-Time Polymerase Chain Reaction (RT-PCR) to confirm the presence of DNA or RNA. The laboratory also performs Time Resolved Fluorescence (TRF) assays to detect specific select agent toxins.

The most recent additions to the Special Pathogens test menu include Middle East Respiratory Syndrome (MERS) and Ebola CDC PCR screening assays. The laboratory is scheduled to receive and implement the CDC Ebola confirmatory assay in December 2015. Implementation of this assay will alleviate the need to submit a sample to CDC for confirmatory testing.

The Special Pathogens Laboratory participates annually in several emergency response drills with local and regional response teams. In addition to response exercises, Special Pathogens participates in both CAP LPX and CDC LRN notification drills and proficiency testing events.

The laboratory consists of three full-time employees that can be reached at (803) 896-0777.

2015 Bioterrorism Wet Workshop

The Bureau of Laboratories (BOL) hosted a one-day wet workshop entitled “Select Agents: Get to Know the Bugs!” on June 4–5, 2015. The free hands-on workshop was presented by Mrs. Amanda Moore, BOL Special Pathogens Supervisor.

The workshop was designed to provide information to help clinical laboratorians enhance their role in the Laboratory Response Network (LRN) and to provide an overview of the role of the clinical laboratory in the presumptive identification of a biothreat agent. Participants learned to recognize culture, staining, and biochemical characteristics, and to differentiate between the agents of bioterrorism and other common laboratory isolates. The safe handling of suspected select agents, understanding the applicable select agent regulations, communicating with the S.C. state public health laboratory, and chain of custody procedures were emphasized as well.

Participants received ASCP CMLE credit for workshop attendance. Stay tuned for further opportunities to attend this course when it's offered in 2016.

Enhancing Laboratory Safety Together

The advent of modern travel and trade has exposed vulnerabilities in our public health systems, especially our ability to safely confront diseases that are endemic in society today. Take for example the Ebola Virus Disease, which has made its way into the United States. With its arrival, the need to actually sit back and reevaluate if we are prepared to take on such is vital. We want to improve biosafety handling and processing of Ebola, as well as other highly infectious specimens. Our goal is to partner with Sentinel Laboratories throughout the state to improve safety practices by initiating thorough laboratory risk assessments according to Association of Public Health Laboratories (APHL), DOT, and CDC practices.

The purpose of the assessment is to identify the significant hazards that may be present in a laboratory area and ensure that the risks associated with these hazards are either eliminated or reduced to an acceptable level for all workers who might be exposed. It is essential that these workers are given appropriate information, instruction and training to ensure all work activities are conducted as safely as possible. We also would like to ensure that laboratories are better equipped to serve jurisdiction in the inactivation and disposal of specimens and other laboratory waste from Ebola or any other highly infectious diseases. If you are interested in risk assessments, as well as shipping infectious specimens, please contact Sharanda McCauley, MPH - Biosafety Officer at (803) 896-0945 at the Bureau of Laboratories to schedule a date that's convenient.

Lab Notes

Molecular Epidemiology

The following tests have been added to the test menu. Prior notification and approval from DHEC epidemiologists are required before specimen submission. Prior approval must be obtained by calling your regional Epidemiological contact located on the back of the list of reportable diseases, or the after-hours medical consultant on call at 803-898-0861. *Bordetella pertussis* samples collected from children under the age of one does not require prior approval, however, prior notification to the Molecular laboratory at 803-896-0824 is requested.

- Mumps rRT-PCR on buccal swabs
- Measles rRT-PCR on throat swabs and Nasopharyngeal
- *Bordetella pertussis* detection and speciation by RT-PCR on Nasopharyngeal swabs or aspirates
- Dengue rRT-PCR on serum or plasma

Virology

Chikungunya IgM Capture ELISA testing is now available on serum specimens.

Mycobacteriology

The Mycobacteriology Laboratory has implemented the GeneXpert for the detection of Mycobacterium tuberculosis and rifampin resistance. This test is used for first time smear-positive patients. Currently, this test is only approved for sputum samples. However, validation studies are in progress to expand the sample type to include bronchial washings and bronchial alveolar lavages (BAL).

Clinical Microbiology

Samples in suspected HUS cases should be saved and sent to the BOL. Please call (803) 896-0805 for further information.



Thank you for reading *The Petri Dish*, a
South Carolina Public Health Laboratory Newsletter
by the DHEC Bureau of Laboratories

VOL. 2 : ISSUE 1 DECEMBER 2015