

Testing for Agents of Bioterrorism

Select agents are bacteria, viruses, and toxins that are easily weaponized for use in acts of bioterrorism due to their transmissibility, severe pathogenicity, ease of dissemination, and low infective doses. Incidences of real bioterrorism inside the modern United States are limited. An outbreak of salmonellosis in Oregon during 1984 was eventually identified as an intentional contamination of salad bars by a group with an agenda to manipulate local elections. And famously, in 2001, envelopes containing anthrax spores were mailed to political and media offices in eastern states. Subsequent exposures resulted in 22 people who contracted anthrax, including five fatalities.

Sometimes infections with select agents occur in humans absent an act of bioterrorism, or infections with other similar organisms cannot be easily distinguished. For instance, some select agents are bacteria that naturally occur in the environment. These are occasionally found among people with travel histories to countries where they are endemic, or originate within the United States where reservoirs for anthrax, brucellosis, plague, and tularemia are in animal populations.

Sentinel Laboratory Select Agent Rule-Out and Referral

Clinical laboratories that perform microbiology testing

are called sentinel laboratories because of the role they play in the early detection of select agents and other high-risk infectious agents. Sentinel laboratories are responsible to train their staff in recognizing potential select agents, and to assess risks posed to their staff and to the public by select agents they may encounter. Most clinical laboratories operate at biosafety level 2 (BSL-2), but there are recommendations for increased biosafety practices around suspect select agents because of the amplified potential for exposures to these organisms when they are manipulated and propagated during the identification process. Guidelines on the recognition and rule-out of select agents in the clinical laboratory have been developed by the federal Centers for Disease Control (CDC) in conjunction with the American Society of Microbiology (ASM). These guidelines are in the Laboratory Response Network (LRN)

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Practice Guidelines

The following practice guidelines have been developed by the Clinical Laboratory Advisory Council. They can be accessed at the [LQA website](#).

Acute Diarrhea	Lipid Screening
Anemia	PAP Smear Referral
ANA	Point-of-Care Testing
Bioterrorism Event Mgmt	PSA
Bleeding Disorders	Rash Illness
Chlamydia	Red Cell Transfusion
Diabetes	Renal Disease
Group A Strep Pharyngitis	STD
Group B Streptococcus	Thyroid
Hepatitis	Tuberculosis
HIV	Urinalysis
Infectious Diarrhea	Wellness
Intestinal Parasites	

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Sentinel Level Clinical Laboratory Protocols, which are publicly available on [ASM's website](#). Sentinel-level laboratories should not attempt to confirm the identity of a suspect select agent on their own. When a sentinel laboratory in Washington state is unable to rule out a select agent using its usual testing, it will refer the specimen to the Bioterrorism team at Washington State Public Health Laboratories (WAPHL). The first step in the referral process is to report the suspect select agent to the appropriate local health jurisdiction (LHJ). The LHJ will contact the Department of Health Office of Communicable Disease Epidemiology (CDEpi, 206-418-5500). CDEpi will enter into communications with the Bioterrorism team and the LHJ concerning the case. The sentinel lab will wait for further direction before shipping its suspect select agent to the PHL for confirmatory testing. Subject matter experts on the Bioterrorism team (206-418-5562) and in the CDEpi office are available to sentinel laboratories, LHJs and healthcare providers for consultation. They can give information related to individual select agents, diagnosis, and recommended control measures, and will assist with arrangements for shipping and testing.

The Bioterrorism team works on suspect select agents in a special high-security, BSL-3 laboratory at WAPHL. The laboratory is a registered space with the federal Select Agent Program. It has the ability to perform confirmatory testing, with specific testing methods used depending on

which select agent is suspected. It is important that the correct referral process be followed by sentinel laboratories so that the Bioterrorism team is aware of incoming specimens. It is also imperative that proper packaging be used to transport the specimen to the laboratory, for the safety of the public and of laboratory workers. As a reminder, improper packaging can result in fines and/or criminal charges imposed by the Department of Transportation. Specimen collection and submission instructions are available at the Department of Health (DOH) website in the [Microbiology Lab Test Menu](#). The test menu also contains links to necessary forms for submitting specimens to the right team at the PHL. When a suspect select agent is referred, preliminary results are available within eight working hours from specimen receipt. Confirmation may take additional time.

This is the [direct link](#) to the list of select agents. To know whether confirmatory testing is available at WAPHL for a specific select agent, see the [Microbiology Lab Test Menu](#) on the DOH website. The Bioterrorism team provides free trainings to sentinel laboratories for recognition, rule-out, and referral of select agents, as well as for correct packaging and shipping protocols for infectious substances. To inquire about these trainings, contact the Bioterrorism team's Sentinel Lab Coordinator Emily Nebergall at 206-418-5543.

Training Dates for 2019:
 August 15 9 a.m.-4 p.m.
 Packaging & Shipping Division 6.2 Infectious Substances

 September 12 9 a.m.-5 p.m.
 Select Agent Rule-Out for Sentinel Laboratories
 Wet lab and classroom combined format

ELABORATIONS is a free monthly publication of the Washington State Department of Health (DOH) Public Health Laboratories (PHL) and Office of Laboratory Quality Assurance (LQA).

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Newborn Screening Updates: New Space, New Tests, New Endeavors

On June 13, the Washington State Newborn Screening (NBS) Program held a media event in the morning and an open house in the afternoon to celebrate the recent completion of a remodel and expansion of the laboratory, storage, and office space. After increasing laboratory space and purchasing improved equipment, staff members from the Department of Health (DOH) are testing babies for additional rare congenital disorders, and plan to add more conditions in the near future. A crew from KING 5 News ran a story on the expansion.

“We save lives by testing all babies born in Washington for these rare congenital disorders,” said Washington State Secretary of Health John Wiesman. “Babies with these conditions often seem healthy at birth, which makes early detection and treatment critical.”

The department currently screens for 29 conditions using a dried blood spot collected from a baby’s heel on a special filter paper card. Each year the laboratory performs more than 12 million tests on more than 164,000 specimens from about 85,000 newborns. Around 200 infants with one of the disorders are identified each year and can receive treatment early in life. As part of the laboratory expansion, the department added testing for X-linked adrenoleukodystrophy (X-ALD), an inherited disorder that affects the nervous system and adrenal glands. The new equipment needed for X-ALD testing was funded in part by the Ethan Zakes Foundation.

DOH will start second-tier testing for cystic fibrosis this summer, which will increase the accuracy of test results and follow-up. Before the end of 2019, the department will add testing for mucopolysaccharidosis type I (MPS-I) and Pompe disease, and the State Board of Health recently approved adding spinal muscular atrophy (likely start date in 2020). Each of these are serious conditions that can be deadly and debilitating.

The afternoon’s open house was also a success, allowing other DOH employees at the Public Health Laboratories to see the new laboratory space. The event was attended by family and friends, including several former NBS employees. If you missed the event and would like to take a tour of the laboratory, please reach out to NBS staff at 206-418-5410 to schedule a date and time.

In other news, starting in September of 2019, the NBS program will begin screening babies born in Hawaii. Largely because NBS requires expensive equipment, states with smaller populations typically contract with a regional laboratory for NBS services. Hawaii has almost 20,000 babies born each year (less than a quarter of the births in Washington). DOH is excited to begin this partnership, and to provide excellent laboratory and follow-up support services to Hawaii. More information on newborn screening is available on the department’s website. Contacts: Gauri Gupta (206-418-5508) and John Thompson (206-418-5531)

Plan to attend the
26th Annual Washington
Clinical Laboratory
Conference November
12, 2019

Calendar of Events

Training Classes:

[2019 Northwest Medical Laboratory Symposium](#)

October 9-12 Lynnwood, WA

[26th Annual Clinical Laboratory Conference](#)

November 12 Tukwila

Contact information for the events listed above can be found on page 2. The Calendar of Events is a list of upcoming conferences, deadlines, and other dates of interest to the clinical laboratory community. If you have events that you would like to have included, please mail them to ELABORATIONS at the address on page 2. Information must be received at least one month before the scheduled event. The editor reserves the right to make final decisions on inclusion.



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For persons with disabilities, this document is available upon request in other formats. To submit a request, please call 1-800-525-0127 (TTY/TDD 1-800-833-6388).