Anthrax (*Bacillus anthracis*)

Louisiana Office of Public Health Laboratory Services (LA SPHL) (504) 219-4664 or (504) 219-4646, 24 Hour Number (504) 458-9537

Louisiana Office of Public Health Infectious Disease Epidemiology (800) 256-2748 (24 hours)

Remember that these samples may be highly infective! Extreme caution should be taken in collecting, preparing for shipment and transporting any material suspected of being contaminated with a biological agent.

Specimen Collection and Transport

Clinical:

Cutaneous anthrax: Sterile rayon or dacron swabs should be saturated in vesicular fluid from a previously unopened vesicle and placed into sterile, screw-cap tubes for transport to the lab. If illness is in eschar stage, rotate a sterile dacron or rayon swab under the edge of the eschar and place swab in sterile tube. Specimens should be kept cold (2-8ºC), not frozen unless the volume collected is small enough to dry on the swab.

Inhalational anthrax: Suitable specimens include: blood and sputum. Sputum samples should be transported in a sterile, screw-capped container. Please note that blood cultures may not be positive until late in the illness, i.e. 2 to 8 days post-exposure and inhalational anthrax does not usually stimulate the production of sputum. Samples should be kept cold (2-8ºC), not frozen and transported to the laboratory as soon as possible.

Gastrointestinal anthrax: Blood, rectal swab and stool samples are suitable specimens. Samples should be kept cold (2-8ºC), not frozen and transported to the laboratory as soon as possible.

Reference cultures:

Any large Gram positive rods isolated from clinical or environmental samples may also be submitted to the LA SPHL for ruling in/out of *B. anthracis*. Cultures may be sent on any slant that will support the growth of *Bacillus* spp., such as blood, chocolate or TSA.

Environmental: (includes any sample NOT from clinical sources)

NOTE: Environmental samples will only be accepted from a first responder and the Louisiana State Police (LSP) must have issued a Critical Incident Report (CIR) number. A CIR number can be received by calling the LSP Haz-mat Hotline at 877-925-6595. These samples can be no longer than 12 inches by 36 inches (including packaging) due to size constraints of the biological safety cabinets used for opening samples. For larger samples, consult the Louisiana State Public Health Laboratory before submitting.

Samples may include paper, water, dry swab samples from air vents or other surfaces, powders, soil or other environmental samples. All samples can be transported at room temperature.

All environmental specimens received in the LA SPHL must be accompanied by the LA OPH Bioterrorism Laboratory Form and the LA State Police Form. A CIR number must also have been issued by the LSP.

The sample being submitted should only be the suspect material. Additional items from the area that are suspected of being exposed should be bagged up and held until testing is complete. For example, if a suspicious package/letter is received in a post office, only the suspicious package/letter should be brought to the LA SPHL for testing. All accompanying pieces of mail and the mail bag or letter tray should be bagged in plastic until testing of the suspicious items is completed. Arrangements for where and how that material will be held are the responsibility of the investigating officials.

The specimen must be transported in a container that the laboratory is able to open within a biological safety cabinet. This would include plastic bags or other devices that can be easily opened. This does not include sealed plastic buckets, etc.

The LA SPHL is unable to accommodate used Haz-mat gear or other collection gear. If the Haz-mat team has collected the specimen they should package their gear in a separate container from the specimen. Disposal of Haz-mat gear is the responsibility of the Haz-mat team.

Testing available:

Culture, isolate identification, real-time Polymerase Chain Reaction (PCR), and Direct Fluorescent Antibody (DFA).

IMPORTANT NOTE: Biological agent field test kits are, at this time, not sufficiently accurate for on-scene decision making in the field.

Reporting:

All reporting times are the minimum time. Any individual specimen could take longer.

A culture specimen could be reported "presumptive positive" in 4-6 hours by PCR with complete identification and positive confirmation at 72 hours.

For raw clinical specimens a "presumptive negative" could be reported in as little as 4-6 hours by PCR. However, clinical specimens are routinely held for a total of 48 hours before a final negative report is issued.

For environmental specimens negatives could be reported in 24 hours if there is no suspicious growth. However, any suspicious growth would need to be investigated and could delay a negative report by several days.