Aerobic Bacteriology Supplemental Information

The Aerobic Bacteriology Section serves primarily as a referral laboratory for bacteria that are unusual or difficult to identify. In this context, aerobic bacteriology refers to the examination of a wide variety of microorganisms. Reference cultures will be accepted from public and private health care providers. Pure culture isolates are required for serotyping and identification of reference specimens. Clinical specimens are accepted for the isolation and identification of specific pathogen if this testing is unavailable at the sending facility. The Aerobic Bacteriology Section does not perform antimicrobial susceptibility testing for patient treatment.

Refer to **Chart I** – **Aerobic Specimens Requiring Special Handling**

Chart I
Aerobic Specimens Requiring Special Handling

Organism or Disease	Collection Instructions	Shipping Requirements	Special Requirements
Bacillus anthracis anthrax	Aseptically collect specimens from lesion, contaminated hair products, or sputum. Subculture isolates to blood or nutrient agar slants. **Use extreme caution.**	Blood culture bottles for blood and spinal fluid, TB plastic tube for sputum. Sterile containers for other specimens. Ship in double-walled shipping container or equivalent.	**Notify Bioterrorism Section before shipping.**
Bordetella pertussis – whooping cough. Refer to BORDETELLA Section.			
Brucella species Brucellosis or undulant fever	Aseptically collect multiple blood samples, infected tissues, abscess material, bone marrow, or liver biopsies. Subculture isolates to sheep blood, nutrient or Brucella agar slants. **Use extreme caution.**	Blood culture bottles, vented and incubated under 5 to 10% CO_2. Use sterile container. Ship in double walled shipping container or equivalent.	**Notify Bioterrorism Section before shipping.**
Burkholderia mallei and B. pseudomallei melioidosis	Aseptically collect blood. Subculture isolates to nutrient or infusion agar.	Blood culture bottles for blood. Ship in double-walled mailing container or equivalent.	**Notify Bioterrorism Section before shipping.**
Corynebacterium diphtheriae Diphtheria	Collect throat or skin lesion swabs. Insert swab into silica gel pack or dry transport tube such as a red top blood collection tube.	Ship in double walled shipping container or equivalent.	**Notify Bacteriology Section before shipping.**

Organism or Disease	Collection Instructions	Shipping Requirements	Special Requirements
Francisella tularensis Tularemia or rabbit fever	Collect specimens aseptically. Specimens include material from lesions and blood cultures. Use extreme caution. Send isolates on chocolate agar. Slants.	Sterile container, no transport medium. Ship in double walled shipping container or equivalent.	**Notify Bioterrorism Section before shipping.**
Haemophilus ducrei Chancroid	Collect specimens from Lesions or inguinal bubo And inoculate onto Enriched chocolate agar And incubate at 35 to 37°C In 5-10% CO_2.	Heavy growth of 24-48 hour culture scraped with sterile swab, transport as subsurface stabs in chocolate agar. Ship in double-walled shipping container or equivalent.	Primary culture must be done at the local level.

Haemophilus influenzae – Isolates from sterile sites required for surveillance purposes.

Listeria monocytogenes – Isolates from all sites are requested.

Neisseria gonorrhoeae - Refer to Neisseria gonorrhoeae

Neisseria meningitidis – Isolates from sterile sites are required for surveillance purposes.

Staphylococcus aureus	Isolates from documented outbreak. Only coagulase positive staphylococci accepted.	Isolated organisms on nutrient or infusion agar slants. Ship in double-walled shipping container or equivalent.	Documentation must accompany specimens. **Notify Bacteriology Section before shipping.** Pulsed Field Gel Electrophoresis (PFGE) is performed.

Streptococcus pneumoniae – Isolates from sterile sites are required for surveillance purposes.

Yersinia pestis	Aseptically collect specimens from Bronchial washings, transtracheal aspirate, sputum, nasopharyngeal swab or culture isolates on blood.	Ship in a double-walled shipping container or equivalent.	Notify Bioterrorism Section before shipping. 605-773-3368
Miscellaneous Bacteria	Use blood, chocolate or TSA slant or Cary-Blair transport.	Ship in double-walled shipping containers or equivalent.	

Specimen Collection

Aseptically collect specimens from sites such as autopsy material, surgically obtained tissue, urine, and the respiratory and urogenital tract using appropriate techniques for the individual type of specimen. Aseptically collect blood samples and inoculate directly into appropriate commercial blood culture bottles. Preferably, all specimens should be cultured at the local laboratory using recommended isolation procedures. To ensure purity, isolates should be subcultured onto appropriate media before transportation to the SDPHL.

Isolated organisms should be submitted on non-carbohydrate-containing agar such as infusion, nutrient, trypticase soy, blood, or chocolate.

Alert the Bacteriology Section at (605) 773-3368 to make special arrangements in urgent situations or unusual circumstances. **Always** telephone in advance when submitting large numbers of isolates, as in an outbreak situation, or when the organism being submitted is classified as a biologically hazardous organism. For specimens requiring special handling refer to Chart I Aerobic Specimens Requiring Special Handling.

Specimen Identification

1. Complete all the provider and patient information areas. Include pertinent clinical information with each specimen.

2. Label each specimen with the date of collection and the patient's first and last name. Unlabeled specimens or specimens where the patient identifier on the specimen does not match the identifier on the form **will not be tested.**

Reporting Procedures and Interpretation of Results

Most cultures are reported within 5 to 10 working days. Mixed cultures or fastidious bacteria may require more time for identification. Final results on isolates submitted to the CDC for confirmation or further testing require a longer interval for completion.

Organisms are identified to a genus and species level only when culture, morphology, and biochemical test results support the species identification. Genus and species designations are those consistent with designations in the American Society for Microbiology, Manual *of Clinical Microbiology* or according to the *International Code of Nomenclature of Bacteria.* Some organisms encountered in aerobic bacteriology can be identified accurately only to the genus level and are reported as such. Organisms normally encountered as contaminants or those believed to lack clinical significance may be reported only to the genus level especially if the culture was not accompanied by clinical information to the contrary.

Organisms reported as "unidentified" are those which do not fit the description of recognized genera and/or species. These organisms are not routinely forwarded to the CDC for further study unless the nature of the isolate, source of isolation, and/or the clinical history of the patient warrant further identification efforts, or a special request is made to forward the isolate (such a request requires justifying information from the submitter).

Criteria for Unacceptable Specimens

All specimens

1. The specimen was not labeled.
2. The patient identifier on the specimen did not match the identifier on the form.
3. The specimen was broken in transit.
4. The type of specimen was improper for the test requested.
5. The specimen was non-viable.
6. A mixed specimen was submitted.
7. The specimen did not arrive in appropriate transport temperature range.