

LABORATORY COLLECTION MANUAL	<b>MICROBIOLOGY: SPECIMEN COLLECTION AND TRANSPORT</b>
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## I. GENERAL PRINCIPLE

Proper collection and transport of specimens is critical to the quality of results produced by the microbiology laboratory. The validity of all diagnostic information produced in the lab is contingent on the quality of the specimen received. Consequences of poorly collected and/or poorly transported specimens include failure to isolate the causative organism, and recovery of contaminants or normal flora which could lead to improper treatment of the patient. The saying is "garbage in--garbage out." The importance of proper collection of specimens cannot be over emphasized.

## II. GENERAL CONSIDERATIONS

### A. Safety

1. Follow **universal precaution** guidelines in obtaining specimens for culture.
2. Do not contaminate the external surface of the collection container and/or any accompanying paperwork with the material being collected.
3. Minimize direct handling of specimens in transit by using plastic sealable bags, labeled with a biohazard label, with a separate pouch for the lab paperwork.

### B. Patient Identification

1. The patient is provided a computer generated armband at the time of admission that contains name, account number, permanent medical record number, date of birth, age, sex, social security number, room number, and attending physician.
2. Nursing personnel is responsible for identifying the patient and attaching the armband.
3. Personnel responsible for specimen collection checks armband information against request for test using name and DOB as the two patient identifiers, before specimen is collected.
4. In the event no armband is present, nursing personnel must identify the patient, generate a new armband and attach to the patient before collection of specimen can be completed.
5. In the case of outpatients, no armband is available. Collection personnel asks patient to identify themselves by name and date of birth.

### C. Patient Preparation and Instruction

1. For specimen collection in which the patient is responsible and unsupervised, verbal and/or written instructions are given to the patient at the time specimen containers are issued (i.e. - stool collection instructions).

### D. Collection

1. Collect specimen before administration of antimicrobial agents when possible.
2. Collect a sufficient quantity of specimen. Too little may yield false negative results.

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3. Collect with as little contamination from normal flora as possible to ensure that the specimen represents the infected site. If collection is through intact skin, cleanse the skin first.
4. Collect specimens at the most active stage of the disease to increase chances of isolation and identification of the causative organisms. Sample the body area, lesion, exudate, or drainage most likely to contain the suspected pathogen (i.e., the leading edge of a skin lesion; depth of a wound, not the surface; sputum, not saliva).
5. Request and encourage the active cooperation of the patient in collection of the specimen. Make sure the patient has adequate instructions and the proper equipment to provide a satisfactory specimen.
6. Use appropriate collection devices, sterile equipment, and aseptic technique. Use only the standard equipment recommended by the laboratory. Do not substitute makeshift containers, bottles, or tubes.
7. Use of an aerobic culturette
  - a. Carefully open the package and remove swab.
  - b. Handle the swab by the plastic cap **ONLY**. Do not touch the swab shaft.
  - c. Sample the material to be cultured, loading the swab as heavily as possible.
  - d. Remove cap from plastic sleeve and discard. Insert the swab and seat the swab cap on the sleeve with firm pressure.
  - e. Squeeze the bottom of the sleeve so that the transport fluid in the sponge thoroughly moistens the swab tip.
8. Use of an anaerobic culturette
  - a. Remove anaerobic culturette from package.
  - b. Remove white plastic plunger with swab attached. Handle by the cap **ONLY**.
  - c. Sample the material to be cultured, loading the swab as heavily as possible. Sample only the infected area. Carefully avoid surrounding surface areas that may be inhabited by normal anaerobic flora.
  - d. Replace swab through hole in gray stopper and guide into the inner small glass tube. **Hold tube at 45° angle** and press down on the disc portion of the plastic plunger with gentle pressure until it rests flat against the stopper. The inner tube will be forced into the outer tube.
  - e. Rotate the tube with a swirling motion to facilitate the mixing of air in the inner tube with the hydrogen atmosphere in the outer tube.
9. Notify laboratory of any specific request by the physician as to pathogen suspected, or a "rule out" request. Include any pertinent patient information, such as travel history, underlying disease, etc.

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C. Labeling

1. The specimen must be identified with:
  - a. Patient name and Date of Birth (this must be on each specimen)
  - b. Identification number
  - c. Source
  - d. Date
  - e. Time of collection
2. Identify the source correctly and specifically, so proper collection media will be selected during processing by the laboratory. ("Wound" is not an acceptable identification of a source. "Right lower leg incision" is a better example of adequate identification.)

D. Transport

1. All specimens should be transported in the appropriate medium for the source. Take care to ensure the specimen makes good contact with the medium (i.e., Shake well; squeeze the sponge to moisten the swab of an aerobic culturette; push the swab cap of the anaerobic culturette all the way down to the rubber stopper).
2. Specimens for anaerobic cultures must be transported in the anaerobic culturette device. In the absence of transport media, hand deliver to the microbiology department within minutes of collection.
3. Transport all specimens to the laboratory promptly (within 30 minutes of collection). Specimens submitted without preservative (i.e., aspirate in a syringe) must be transported immediately and hand delivered to the microbiology tech on duty. Rapid transport:
  - a. Ensures the survival and isolation of fastidious organisms and prevents overgrowth by more hardy bacteria.
  - b. Shortens the duration of specimen contact with any local anesthetics used in collection that might have antibacterial activity.
  - c. Provides a more accurate assessment of the number of organisms present in the infectious disease process.
4. See specific source of specimen for any acceptable alternatives to prompt delivery. Aerobic culturettes will maintain organism viability for approximately 72 hours after collection. The anaerobic culturette has the same time limit as long as the indicator in the bottom of the tube remains white. A pink indicator means the specimen is no longer in an anaerobic atmosphere and the specimen will not be cultured for anaerobes. A urine specimen in a preservative tube is acceptable up to 48 hrs after collection.
5. All specimens for culture must be transported in a suitable container or placed in a biohazard bag for safe transport to the laboratory.

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***See original policy in the Laboratory for all documented annual reviews.***

**REFERENCE:**

Clinical Microbiology Procedures Handbook, 1992, Isenberg, American Society for Microbiology.