

YNHH Laboratory Manual

Specimen Collection

This manual contains basic information on the substrate (e.g., blood, plasma, urine, etc.), collection container, and minimum volume for optimal performance of laboratory tests.

Note that when multiple tests are requested on a single specimen, the **specimen volume** needed may be less than the sum of required volumes for individual tests. Check with laboratory if obtaining adequate blood volume is problematic.

For tests with **unique collection requirements**, please contact the appropriate laboratory for special instructions and/or containers.

Properly labeled samples (see Specimen Labeling) in sealed, leakproof containers should be delivered promptly to the laboratory.

Biohazard bags should contain samples from only one patient. **Biohazard bags containing samples from more than one patient will be rejected** and samples will need to be re-collected.

For microbiology and virology testing, **prompt processing** is essential to avoid degradation of pathogens as well as bacterial overgrowth in vitro, especially for tissue biopsies, CSF, wound and anaerobe cultures, and urines. In addition, many quantitative viral load tests require prompt sample processing for accurate results.

For short delays, most samples should be **kept at 4°C**. CBCs however should be kept at room temperature. For specific information, check the individual tests in this manual.

Check individual tests in this manual for specimen collection instructions, correct specimen types, and transport media.

Below are the tubes most commonly used for samples whose collection requires phlebotomy.

When more than one tube type is listed in the manual, the first listing is the **preferred type**.

Note: For stat electrolytes, BUN, creatinine, and glucose, a light green top tube is preferred. A gray top tube is preferred for fasting glucose, glucose tolerance, and routine outpatient glucose determination.

When drawing several different tubes, the **preferred draw order** is: blood culture, royal blue - red label for trace metal analysis, light blue top (coagulation studies), red top, red gel tube (speckled or "tiger" top), yellow top (SST), light or dark green top, lavender or pink top, gray top, ACD tube.

Blood Drawing Tubes

Tube Top Color	Anticoagulant
Gray	Sodium Fluoride, Potassium Oxalate
Green	Lithium Heparin
Green	Sodium Heparin, (Genetics)
Light Blue	Buffered Sodium Citrate
Lavender	Potassium EDTA

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Light Green	PST Gel and Lithium Heparin
Pink	Potassium EDTA, (Blood Bank)
Red	None
Royal Blue w/ Lavender Label	EDTA, Trace Metal Free
Royal Blue w/ Red Label	None, Trace Metal Free
Yellow	ACD (Acid Citrate Dextrose) - Tissue Typing
Red/Yellow	EDTA, Ascorbic Acid

Leaking or contaminated containers and syringes

Blood, urine, body fluids, and fecal specimens may harbor a variety of pathogens. Hepatitis B and C viruses, and human immunodeficiency virus are of greatest concern. However, many other infectious agents may also be spread through contact with specimens submitted to the laboratory.

For the safety of all who handle these specimens, and in compliance with federal guidelines, we **cannot accept specimens that are leaking or are contaminated on the outside** of the container or on the accompanying requisition.

No specimen is to be submitted in a syringe, with or without an attached needle, except for blood gases submitted in a syringe with a safety closure.

Specimens must be transported to the laboratory in a sealed **biohazard plastic bag, with only one patient 's samples per bag.**

Specimens "tubed" to the laboratory must be in a sealed biohazard bag, be cushioned with [foam], and be in a completely closed carrier (see below). Blood cultures must be tubed separately from other samples (see instructions below under Pneumatic Tube System).

Proper Urine Collection

Spot urines are random samples of urine collected at any time. Timed urines are urines collected carefully over a fixed time, usually 24 hours. The use of a 24-hour collection period eliminates fluctuations due to diurnal variations in excretion of many components.

At the start of a timed collection, the patient should void and the **first voided urine should be discarded.** Thus, urine formed before the beginning of the collection period is not included in the collection. Subsequent urine specimens are collected into an **appropriate container** including a final void at the end of the collection period.

Many timed urine collections require **special preservatives or refrigeration** during the collection to avoid degradation of the analyte over the prolonged collection period. Be sure to collect the urine with the appropriate preservative or an entire day's worth of effort may be invalidated.

Appropriate containers for spot urine collections are available on the floors. Containers for timed collections requiring no preservative are to be ordered from the hospital storeroom by the patient care area. Containers with preservatives may be obtained from Core Laboratory Central Receiving by calling the Laboratory Medicine Customer Call Center at 688-2444. Some specimens are preserved with acid or

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alkali. Patients and medical staff should be reminded to avoid contact with these preservatives and to wash immediately with copious amounts of water should contact occur.

When blue BD Vacutainer Urine Collection Cups are used to obtain the initial urine sample, the urine must be transferred into test-appropriate leakproof tubes prior to transport. Urine specimens received in the initial blue urine collection cups with the needle (cannula) attached will not be accepted and the samples will need to be re-collected.

Pneumatic Tube System

Critical, irretrievable and time sensitive specimens should be **hand-carried** to the laboratory. CSF or other irreplaceable samples are not approved for transport using the Tube System.

All samples sent via the Pneumatic Tube System must be enclosed in a **zip-lock biohazard bag** and foam inserts must be placed inside the carrier at both ends.

Plastic blood culture bottles must be tubed separately, sealed in a biohazard bag (one bottle per bag), with a maximum of two bottles per carrier, and with the neck of each bottle in the center (facing each other). Foam inserts must be placed inside the carrier at both ends.

The specimen carrier must be **securely closed** with both latches locked and nothing protruding. Over-packing the carrier can cause the tube system to jam.

When tubing samples, be sure the carrier launches. **Failure of the carrier to launch** can lead to significant delays in specimen arrival in the laboratory.

Engineering has the responsibility for the **operation of the tube system** used to deliver specimens to the laboratories. Questions regarding the tube system should be directed to the Service Response Center (688-9000).

However, questions concerning **missing or delayed specimens** should be directed to the Laboratory Medicine Customer Call Center @ 203-688-2444 or 1-800-305-3278.

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