Section 1	Sample Management Procedures	09/01/12 -Effective
Subject Topic 1.01	Client Specimen Collection and Processing Specimen Collection	

Specimen Collection

Audience

All personnel responsible for collecting and transporting samples to UTMB laboratories.

Purpose

To provide guidelines for the proper collection and handling of laboratory specimens.

Policy

All specimens must be handled according to the Standards/Universal Precautions guidelines written by the Centers for Disease Control and Prevention (CDC) and enforced by the Occupational Safety and Health Administration (OSHA).

Proper specimen collection and handling are integral parts of obtaining a valid, timely laboratory test result. Specimens must be collected in the appropriate container using proper phlebotomy techniques. They must be correctly labeled and promptly transported to the laboratory within conditions specific to the tests requested. It is the policy of the laboratory to reject samples when these guidelines are not followed.

Complete specimen handling requirements are provided in the alphabetical test listing of the Laboratory Survival Guide (LSG), accessible online from the UTMB homepage. The LSG provides the most current information on patient preparation, specimen type, specimen labeling, preservation, minimum volume, storage temperature, conditions for transportation and any special handling notes.

Procedure

Venipuncture is a complex procedure and requires knowledge, skill, and training to be performed properly.

Specimen Collection:

I. Identify and prepare patient

II. Assemble supplies and put on gloves

III. Verify requested tests and required specimens

IV. Venipuncture/ collection
If multiple tubes are to be drawn, fill tubes in proper order:

1. Blood culture tube
2. Coagulation tube (blue top)
3. Non-additive tube (red top or SST)
4. Additive tubes (green/ gold/ lavender tops)

V. Label tubes
Specimens that are not properly labeled will be rejected. The

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specimen container must be labeled with a minimum of two patient identifiers. Refer to PCS 7.01.03 for specimen labeling requirements.

VI. Requisitions

All specimens must be accompanied by a requisition or electronic order. Incomplete requisitions may delay laboratory reports. The requisition must contain the following information:

A. Patient's first and last name

B. Patient's unique ID #

C. Unit of assignment

D. Date and time collected

E. Date ordered

F. Tests requested

G. Patient's date of birth

H. Name or initials of person collecting the specimen

VII. Prepare Specimen for Transport to Laboratory

Appropriately labeled samples should be sent to the laboratory for testing. Prompt removal of specimens from the collection location is especially important if the temperature is greater than 22º C.

A. Serum or plasma should be physically separated from cells within **TWO HOURS** from the time of collection.

1. Potassium increases significantly after 2 hours.
2. Glucose decreases significantly after 2 hours.
3. LDH increases after 2 hours.

B. Refrigerated Specimens

Refrigeration inhibits the metabolism of blood cells. Whole blood specimens are not to be refrigerated unless there is a documented reason for doing so.

1. To chill a specimen, it is to be placed in either crushed ice, or a mixture of ice and water. Good contact between the cooling medium and the specimen is essential.
2. Refrigerated specimens should be bagged in clear transport bags.
3. Examples of tests requiring a refrigerated

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specimen include: pH, blood gases, and ammonia.

C. Frozen Specimens

1. To freeze a specimen, place in a freezer with a temperature of below -18º C.
2. Frozen specimens should be bagged in blue biohazard bags for easy identification by laboratory couriers.
3. Courier will place frozen specimens in a small ice chest containing dry ice.
4. Examples of tests requiring a frozen specimen include: PTH, aPTT, and Lupus Panel.

D. Special Considerations

1. Additive tubes: Immediately after collection, tubes with additives (plasma) should be gently inverted 5-10 times to mix the specimen with the additive.
2. Non-additive tubes: Specimens without anticoagulant additives (serum specimens) should stand for a minimum of 30 minutes in a vertical position to allow for complete clotting before centrifugation.
3. Exposure to light: Examples of light-sensitive assays include: bilirubin, porphyrins, and vitamins A and B6. These specimens should be protected from light (i.e., wrapped in aluminum foil or paper towel, or transferred to plastic amber tubes).
4. Frozen specimens: Submit all frozen samples in plastic containers. Frozen samples must not be submitted in glass containers. If multiple tests require frozen specimens, submit a separate frozen sample for each test ordered.

E. Unacceptable Specimens

To assure optimum integrity of patient specimens from the time of collection until testing is completed and results reported, all specimens submitted to UTMB Laboratories for testing must be properly collected, labeled, processed, and transported. Reasons for specimen rejection or test cancellation include:

1. Leaking specimen

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2. Improperly labeled specimen
3. No date or time of collection listed on the requisition
4. Inappropriate specimen type
5. Specimen received in expired transport container or media
6. Glass tubes (unless otherwise specified by the LSG)
7. Syringes with needles attached
8. Transport tubes secured with parafilm
9. Improperly processed samples (i.e. specimens not centrifuged or inadequately centrifuged)

If the integrity of the sample interferes with maintaining quality standards, Client Services will notify the provider, nurse, or other designated representative to request a new sample.

Please refer to the online Laboratory Survival Guide (LSG) or contact Client Services at 409-747-2900 or 800-522-2266 concerning any questions pertaining to specimen collection and transport.

Reference

Garza D and Becan-McBride K: Phlebotomy Handbook: Blood Collection Essentials. 5th ed. New Jersey: Prentice-Hall Publishers, 1999

US Department of Labor and Occupational Safety and Health Administration (OSHA).

CS01.10 Outreach Sample Integrity

CLSI GP-33A

Laboratory Survival Guide

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DIVISION OF SAMPLE MANAGEMENT PATHOLOGY CLINICAL SERVICES

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