

# PHLEBOTOMY SERVICES

## NorthShore Laboratory Services (NSLS)

NSLS is the Outreach Services group of the NorthShore University HealthSystem's Department of Pathology and Laboratory Medicine. Operational and administrative functions such as Customer Service, Billing Service, Phlebotomy Service, Patient Service Centers (PSC), and Sales/Marketing are directed from the offices at 501 Skokie Boulevard in Northbrook. Clinical and Anatomical Pathology testing is performed in the Department of Pathology and Laboratory Medicine which is located at the Evanston Hospital campus with support by laboratories at Glenbrook, Highland Park and Skokie Hospital campuses. NSLS operates sixteen (16) patient service centers (PSC) in conjunction with services provided by three (3) hospital Outpatient Laboratory facilities and one (1) hospital Ambulatory Care Center.

NSLS offers a full range of Anatomical and Clinical Pathology services in addition to a wide array of esoteric and specialized testing. Greater than 99% of laboratory testing is performed in the laboratory facilities at Evanston Hospital. The staff performing these services consists of nationally certified Allied Health Professionals and board-certified physicians (MD and PhD) who are on faculty with the University of Chicago Pritzker School of Medicine.

### **Laboratory Services**

- ANATOMIC PATHOLOGY  
Full range of Surgical Pathology services by board-certified Anatomical Pathologists
- BLOOD BANK
- CORE LABORATORY
- CYTOGENETICS
- CYTOLOGY  
Full range of Gynecological/Non-Gynecological services by a board certified Cytopathologist
- DERMATOPATHOLOGY  
Board-Certified Dermatopathologists
- FLOW CYTOMETRY
- IMMUNOLOGY
- MICROBIOLOGY  
Bacteriology,  
MRSA Screening  
Mycology, Mycobacteriology  
Parasitology  
Virology
- MOLECULAR DIAGNOSTICS  
Influenza Sub-typing  
Infectious disease by PCR  
Tumor cell detection
- URINALYSIS

## Semen Analysis

Specimen collection and testing is performed by The Fertility Center of Illinois only. Patient is to contact The Fertility Center of Illinois at (877.324.4483) and inform them they are being referred by Highland Park Hospital **BEFORE** specimen collection.

## Specimen Collection

The ability to produce accurate laboratory results is dependent upon properly collected and preserved specimens. If you have any questions regarding specimen collection contact the NSLS Customer Service Center at 847.663.2100.

### **Serum**

Draw the required amount of blood that will yield sufficient serum volume

**Draw blood and immediately invert five (5) times**

**Leave the vacutainer in an upright position for 30 minutes to ensure the specimen has completely clotted**

**Centrifuge the specimen for 15 minutes to separate the clot from the serum**

### **Plasma**

Draw the required amount of blood that will yield sufficient plasma volume. Gently invert the vacutainer 6-10 times to ensure that the blood and anticoagulant is well mixed. Centrifuge the specimen for 15 minutes to separate the plasma and submit for analysis.

### **Whole Blood**

Draw the required amount of blood and gently invert 6-10 times to ensure that the blood and anticoagulant is well mixed. **Do not centrifuge** and submit for analysis.

## Blood Specimen Collection Containers

### **Vacutainers**

**Note:** Gently invert the vacutainer 6-10 times to ensure that the blood and anticoagulant is well mixed

#### ➤ **ACD Yellow Top Tube**

*Solution A:* Contains trisodium citrate, citric acid, dextrose as the anticoagulant - commonly used for HLA, DNA and paternity testing.

#### ➤ **ACD Yellow Top Tube**

*Solution B:* Contains trisodium citrate, citric acid, dextrose as the anticoagulant - commonly used for HLA, DNA and paternity testing.

#### ➤ **Dark Blue Top Tube - K2EDTA**

Contains K2 EDTA as the anticoagulant - commonly used for plasma trace elements and toxicology assays.

#### ➤ **Dark Blue Top Tube**

Contains NO anticoagulant - commonly used for serum trace elements assay.

#### ➤ **Gold Top Tube (Serum Separator Tube)**

Contains NO anticoagulant and a gel barrier that separates the serum from the clot during centrifugation - commonly used for tests requiring serum.

#### ➤ **Gray Top Tube**

Contains sodium fluoride as the anticoagulant - commonly used for glucose determinations.

#### ➤ **Green Top Tube (Heparin)**

Contains lithium heparin as the anticoagulant - commonly used for plasma assays in chemistry.

#### ➤ **Lavender Top Tube**

Contains K2 EDTA as the anticoagulant - commonly used for Hematology testing.

- **Light Blue Top Tube**  
Contains sodium citrate as the anticoagulant - commonly used for Coagulation testing.
- **Mint Green Top Tube - PST**  
Contains lithium heparin as the anticoagulant and a gel barrier that separates the plasma from blood cells during centrifugation - commonly used for plasma Chemistry testing.
- **Plasma Preparation Tube - PPT™**  
Contains K2E as the anticoagulant - commonly used for Molecular Diagnostic testing such as PCR, branched DNA (bDNA) amplification
- **Red Top Tube**  
Contains NO anticoagulant - commonly used for serum Chemistry assays.
- **Tan Top tube**  
Contains K2 EDTA as the anticoagulant, tube is certified as lead free - commonly used for whole blood lead testing

### **Urine Collection Containers**

- **Urine Culture Tube**  
Vacutainer tube with a gray top contains a preservative specifically designed to stabilize bacterium for **urine cultures**  
  
**Note:** Specimen is UNSUITABLE for urinalysis.
- **Urine Transport Tube**  
UA \*Stasis Tube with a yellow push cap contains a preservative specifically designed to stabilize urine sample for urinalysis testing

- **24-Hour Urine Bottles**  
Large screw cap bottle(s) that contains various preservatives specifically designed to stabilize urine analytes.

<b>Bottle #1</b>	No Preservative
<b>Bottle #3</b>	50% HCl (20 mL)
<b>Bottle #4</b>	Dark brown bottle with sodium carbonate (5 grams)
<b>Bottle #5</b>	Boric acid (10 grams)
<b>Bottle #8</b>	50% Acetic Acid (25 mL)
<b>LithoLink</b>	Special preservative provided by LithoLink Laboratory

**Note:** For 24-hour urine collections it is very important that the correct collection bottle be used. If the specimen is not collected in the proper bottle, erroneous results will be obtained.

### **WARNING**

*The chemical preservatives in the 24-hour collection bottles can cause burns and damage to mucous membranes. Patients are to be instructed to avoid contact with the vapors and contents.*

In case of exposure, the area is flushed with copious amounts of cool, flowing water. Medical attention should be followed up as needed.

### **Use the following procedure for the proper collection and preparation of 24-hour urines**

1. Warn the patient of the presence of potentially hazardous preservatives in the collection container(s)
2. Instruct the patient to refrigerate the container(s) during the collection period
3. Ensure that the patient's full first and last name is on the collection container(s)
4. Instruct the patient to DISCARD the **first morning** specimen and to record the time of voiding
5. Instruct the patient to collect ALL subsequent voided urine for the remaining day and night
6. Instruct the patient to COLLECT the **first morning** specimen on the second day at the same time as noted on the first day

7. When submitting the sample to NSLS mix the total volume prior to aliquoting off a sample and provide the TOTAL 24-hour volume on the requisition

For **urinalysis specimens**, an aliquot of the 24-hour urine is to be submitted in the **Urine Transport Tube** (see above) containing preservative.

For **urine culture specimens**, an aliquot of the 24-hour urine is to be submitted in the **Urine Culture Tube** (see above) containing a preservative.

### **Specimen Labeling**

In order for NSLS to accept and process specimen(s) for testing it must be properly labeled. To meet current labeling requirements the actual specimen container must be labeled with the patient's full first and last name and date of birth (DOB) and **MUST** match the patient's full first and last name **IDENTICALLY** on the requisition.

Those samples that fail the identification match will be discarded and a request for a new sample will be made. Samples that fail the identification match AND are determined to be "**IRRETRIEVABLE**" will be reviewed by the Medical Director of the respective department prior to analysis.

Anatomic Pathology and Dermatopathology specimens **MUST** be labeled with the biopsy/specimen site.

Blood Bank specimens have additional requirements please refer to:

### **Unacceptable Specimens**

Some specimens cannot be processed because of improper collection (see Section 1 – Specimen Collection) or have prolonged turn-around-times because of missing sample(s) or patient information.

In the event specimen(s) cannot be processed or a problem prevents the timely processing you will be notified the next business day.

To avoid specimen rejection review the following check list.

- Patient information matches specimen(s)
- Correct specimen container
- Correct specimen type submitted
- Sufficient specimen volume
- Full 24-hours of urine collection
- Lack of hemolysis