Laboratory test results are dependent on the quality of the specimen submitted. It is important that all specimens and request forms be properly labeled as outlined in the policy section of this catalog.

If there is any doubt or question regarding the type of specimen that should be collected, it is imperative that St. Dominic Hospital Reference Laboratory Client Services be contacted at 601-200-6710 to clarify order and specimen requirements.

**Blood Collection**

Most laboratory tests are performed on anticoagulated whole blood, plasma, or serum. Please refer to the individual test directory section for specific collection and transport requirements.

- **Plasma**: Draw a sufficient amount of blood with indicated anticoagulant to yield necessary plasma volume. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw. If required, separate plasma from cells by centrifugation within 20 to 30 minutes.
- **Serum**: Draw a sufficient amount of blood to yield necessary serum volume. Allow blood to clot as instructed in the individual test listing.
- **Whole Blood**: Draw a sufficient amount of blood with indicated anticoagulant. Gently mix blood collection tube by inverting 6 to 10 times immediately after draw.

**Blood Specimen Collection Order of Draw**

To minimize crossover contamination due to different tube anticoagulants and additives, the following order of draw is recommended:

- Sterile collection for blood cultures
- Plain, red-top tube (glass only-no additives)
- Light blue-top tube (sodium citrate)*
- Plain, red-top plastic tube with clot activator
- Gold-top serum separator tube with clot activator
- Light green-top plasma separator tube (sodium or lithium heparin)
- Dark green-top tube (sodium or lithium, heparin)
- Lavender- or pink-top tube (EDTA)
- Grey-top tube (potassium oxalate/sodium fluoride)

*Per Becton-Dickinson Diagnostics—When using a winged blood collection set for venipuncture and a light blue-top (sodium citrate) tube is the first specimen tube to be drawn, a discard tube should be drawn first. Discard tube must be used to fill blood collection set tubing’s “dead space” with blood, but discard tube does not need to be completely filled. This important step will ensure maintenance of the proper blood-to-additive ratio of blood specimen. Discard tube should be a nonadditive or coagulation, light blue-top (sodium citrate) tube.

**Collection Tubes**

Following is a list of tubes referred to in St. Dominic Hospital Reference Laboratory’s specimen requirements:

- **Green-Top Tube (Sodium Heparin)**: This tube contains sodium heparin—used for collection of heparinized plasma or whole blood for special tests.  
  **Note**: After tube has been filled with blood, immediately invert several times to prevent coagulation.

- **Grey-Top Tube (Potassium Oxalate/Sodium Fluoride)**: This tube contains potassium oxalate as an anticoagulant and sodium fluoride as a preservative—used to preserve glucose in whole blood and for some special chemistry tests.  
  **Note**: After tube has been filled with blood, immediately invert several times to prevent coagulation.

- **Lavender-Top Tube (EDTA)**: This tube contains EDTA as an anticoagulant—used for most hematological procedures.  
  **Note**: After tube has been filled with blood, immediately invert several times to prevent coagulation.

- **Light Blue-Top Tube (Sodium Citrate)**: This tube contains sodium citrate as an anticoagulant—used for drawing blood for coagulation studies.  
  **Note**: It is imperative that the tube is completely filled. The ratio of blood to anticoagulant is critical for valid prothrombin time results. Immediately after draw, invert tube 6 to 10 times to activate anticoagulant.

- **Red-Top Tube**: This tube is a plain VACUTAINER® containing no anticoagulant—used for collection of serum for selected chemistry tests as well as clotted blood for immunohematology.

- **Royal Blue-Top Tube**: There are 2 types of royal blue-top Monoject® tubes—1 with anticoagulant EDTA and the other plain. These are used for collection of whole blood or serum for trace element analysis. Refer to individual metals in individual test listings to determine tube type necessary.
• Serum Gel Tube: This tube contains a clot activator and serum gel separator—used for various laboratory tests.
  Note: Invert tube to activate clotting; let stand for 20 to 30 minutes before centrifuging for 10 minutes. If frozen serum is required, pour off serum into a plastic vial and freeze. Do not freeze VACUTAINER(S)®.

• Special Collection Tubes: Some tests require specific tubes for proper analysis. Please contact St. Dominic Hospital Reference Laboratory Client Services at 601-200-6710 prior to patient draw to obtain correct tubes for metal analysis or other tests as identified in individual test listings.

• Yellow-Top Tube (ACD): This tube contains ACD—used for drawing whole blood for special tests.

Microbiology Specimen Collection

• Acid-Fast Bacillus (AFB) Stains and Cultures:
  —Sputum
  • Collect a series of 3 to 5 days early-morning, “deep-cough” sputum specimens on consecutive days. Patient should be instructed to rinse out his mouth with water before collection and informed of the necessity of a deep productive cough to collect lung secretions and not saliva or nasopharyngeal secretions. Specimen should have a volume of 5 mL to 10 mL and be collected in a sterile leak proof container. Process for concentrating and decontaminating specimens for AFB is lengthy and involved. Specimens should be transported to laboratory immediately. Specimens received by noon will have an AFB smear report available on the next day.
  Note: 24 hour pooled sputum specimens are unacceptable for culture.
  • If patient cannot produce a good quality sputum specimen, an induced sputa can be collected by Respiratory Therapy.
  Note: Note on request form that specimen is an induced sputum as it may appear watery like saliva and be rejected as a poor specimen.
  —Other Specimen Types
  • Other specimens may be sent for AFB cultures. For urines, a clean-catch early-morning specimen is the specimen of choice. Gastric lavage, bronchial washings, body fluids, and tissue specimens may be sent to laboratory for AFB cultures. Specimens collected on swabs are not desirable for culture since there is a very limited amount of specimen.

• Anaerobic Cultures:
  —Anaerobic bacteria are extremely sensitive to oxygen and should not be exposed to air. Special oxygen-free collecting tubes must be used and may be obtained from the Bacteriology Department or use gel swab for collection. Specific instructions for using tubes are as follows:
    1. Pull away paper pouch and remove sterile swab. Remove lid from Culturette®.
    2. Obtain specimen and place swab through hole into Culturette®.
    3. Transport to laboratory immediately.
  —These oxygen-free tubes may be used to transport tissue specimens to the laboratory as well. Tissue should be cut, under sterile conditions, to fit in the tubes and the tubes should be used in same manner as above, pushing the tissue into the bottom of tube with swab.

• Blood Culture:
  —Blood cultures must be drawn using careful skin preparation as outlined by laboratory protocol. Timing of cultures is important, and should be drawn according to physician’s specifications. If physician does not specify timing of cultures, the following guidelines should be used:
    • If a regular periodicity of fever can be established, the best time to draw the culture specimen is immediately before a temperature spike, since this is the time of highest concentration of organisms. If this cannot be established, it is generally recommended that specimens be drawn from different venipuncture sites at least 15 minutes apart, since it takes about that long for normal defenses to clear bacteria from circulation. No more than 3 cultures per day are recommended. Two cultures are usually adequate since the volume of blood drawn is 20 mL/culture.
    • In cases where immediate empiric antibiotic therapy is required, 2 blood cultures drawn from separate sites at approximately the same time (before therapy is instituted) are usually sufficient to detect the causative agent.
  Note: An order for blood cultures includes an aerobic and anaerobic culture.
• Fluid should be transported to laboratory in a sterile, capped syringe or in a sterile tube.
  —Anticoagulant tubes are not recommended since certain organisms are inhibited. If an anticoagulant must be used, it should be heparin.

• Bone Marrow Culture:
  —Bone marrow is collected by a physician, usually a pathologist. A laboratory person should be called when cultures are needed. Bone marrow needs to be inoculated directly to AFB and fungus media with 3 to 5 drops from a syringe with the rest injected into a blood culture (aerobic) bottle with a clean needle attached to the syringe.

• Eye, Ear, and Sinus Contents:
  —Suppurative material from an infected eye should be collected from the inner canthus of the eye with a sterile swab. If infection with *Chlamydia trachomatis* is suspected, corneal scrapings should be collected by physician using special collection kit which may be found in the Bacteriology Department. Specimens such as conjunctival scrapings, corneal scrapings, or intraocular fluid will be collected by physician and are usually inoculated directly onto media. Laboratory will supply media upon request.
  —Cultures of the ear are best collected by an otolaryngologist and should be submitted on a sterile swab.
  —Cultures from the maxillary, frontal, or other sinuses should be collected by syringe aspiration technique and submitted for both aerobic and anaerobic culture.

• Fungal Immunodiffusion-Serum:
  —Should be a fasting serum specimen.

• Intravenous Catheter Tip Cultures:
  —Skin around catheter tip should be thoroughly disinfected prior to removing catheter to prevent contamination with skin flora. Once catheter is removed, a short section (approximately 2 inches) including area directly beneath skin should be aseptically cut off. Place tip in a sterile container without liquid. Specimen should be transported to laboratory as soon as possible.
  
  **Note:** Indicate on request form type of catheter tip.

• Nasopharyngeal Cultures:
  —A sterile calcium alginate-tipped nichrome or thin aluminum wire should be used. The flexible wire swab is gently inserted through the nose to posterior nasopharynx, then deftly withdraw swab. Specimen should be transported to laboratory as soon as possible. Specimen can be placed in Culturette® to keep moist.

• Respiratory Syncytial Virus (RSV)
  • Specimen of choice for RSV is nasopharyngeal aspirate: Use a #5 to #8 disposable infant feeding tube attached to a 10 mL syringe or large suction bulb. Introduce tube through patient’s nose and aspirate secretions from nasopharynx. If unable to aspirate any secretions, a small amount (1 mL) of saline can be added to obtain a washing. Transport specimen to laboratory immediately, preferably at 2° C to 8° C (on ice).

• Spinal Fluid (CSF) Cultures:
  —When spinal fluid is collected for bacteriologic examination, it must be transported to laboratory immediately and examined at once. Specimens received in laboratory will usually consist of 3 tubes labeled as #1, #2, and #3 and should be processed as follows:
    • **Tube #1**—Chemistries because it may contain blood or skin contaminants due to the tap.
    • **Tube #2**—Bacteriology because it is less likely to be contaminated with organisms due to needle puncture.
    • **Tube #3**—Hematology because it is least likely to be contaminated with blood cells due to the tap and will give the best cell count.

• Stool Cultures:
  —Stool for culture should be placed in a vial containing Cary-Blair media for preservation of pathogens.
  —Stool cultures are routinely screened for pathogens such as: *Salmonella*, *Shigella*, or *Campylobacter*. Please request under special instructions if physician specifies orders for *Escherichia coli* O:157, *Vibrio*, vancomycin-resistant *Enterococcus* (VRE) or *Yersinia*. These isolates require special media inoculation at time of culture setup.

• Stool; Ova, Cysts, and Parasite (OCP), WBC, *Giardia*, *Cryptosporidium* DFA:
  —Stools for OCP test must be brought to laboratory immediately in the fresh state, or in ECOFIX™ Transport Media if delay in transport is anticipated.
  —Specimens should be collected prior to patient preparation (mineral oils, laxatives) for endoscopy or x-ray procedures. Specimens containing barium
are not suitable for OCP testing, therefore, specimens should be collected before barium x-ray procedures or 3 to 5 days after barium x-rays have been completed. Specimens ordered “X3” should be collected 1 per day for 3 days for the highest probability of parasite recovery. Parasites are fragile organisms and are easily destroyed if specimen is allowed to sit and cool. Specimens must be transported to laboratory immediately in order for examination to be of value to the patient.

• Occult Blood:
  — Stools should be submitted in a clean container and submitted as soon as possible for laboratory testing. Immediate processing is of best value to the patient.

• Clostridium difficile Toxin:
  — Requirements for Clostridium difficile assay and/or culture are at least 2 mL or tablespoon of stool. Specimen should be transported to laboratory immediately in the fresh state.

• Throat Cultures and Rapid Group A Strep Screen:
  — A sterile Culturette® swab should be used to swab throat. Tongue should be depressed and throat adequately exposed and illuminated. Swab should be rubbed over each tonsillar area and posterior pharynx. Any area exhibiting exudate should be touched. Care should be taken in removing swab to avoid contaminating it by touching the lips or tongue. Specimen should be transported to laboratory as soon as possible.

• Urogenital Cultures:
  — Urethral discharge may occur in males and females and may indicate infection by any of a number of pathogens. In males, collection of discharge may be accomplished by insertion of a urogenital swab approximately 2 cm into urethra. It should be rotated gently before withdrawing in order to capture some epithelial cells form urethral mucosa. In cases of profuse urethral discharge in males, discharge may be collected externally, without inserting swab into urethra. Material from cervical culture in females may be collected on a swab and transported to the laboratory for inoculation to the proper media or inoculated at bedside as indicated. Refer to Genital Culture Collection for collection information.

• Urine Culture:
  — Prevention of contamination by normal vaginal, perineal, and anterior urethral flora is the most important consideration for collection of a clinically relevant urine specimen. A carefully collected “clean-catch” specimen should be used whenever possible. Good patient education is important in acquiring an acceptable specimen. Once specimen is collected, it should be transported to the laboratory immediately or be refrigerated in order to preserve the bacterial counts at the same level.
  — If catheterized urine is collected, it should be taken from mouth of catheter rather than from catheter bag since urine in the bag is generally contaminated. For indwelling catheters, the catheter port should be cleaned with 70% alcohol. Using sterile technique, collection port should be punctured with a needle, urine aspirated into syringe, and urine transferred into a sterile container. Specimen should be transported to laboratory as soon as possible.
  Note: Indicate on request form if specimen is a catheterized specimen.

• Wound Cultures:
  — Surfaces of cutaneous wounds or decubitus ulcers are often colonized with environmental bacteria, swab specimens many times do not reflect the true cause of the infectious process. Because of this, the best method of collecting specimens is by aspirating loculated purulent material from depths of wound with a sterile needle and syringe. Wound margins should be cleaned with surgical soap and 70% alcohol prior to aspiration. If a swab must be used, wound margins should be gently separated and tip of swab extended deep into wound, taking care not to touch sin margins. Swab should be transported in Culturette® with the ampule crushed. Specimen must be transported to laboratory immediately.

• Specimens for Special Culturing (Viral, Chlamydia, Legionella, etc.):
  — Office personnel should contact the Bacteriology Department directly for special instructions concerning the particular order for special cultures.

Microbiology Specimen Collection Devices
The following devices are recommended for collection of specimens submitted for testing in the Bacteriology or Microbiology Department and are available by request from St. Dominic Hospital Reference Laboratory Client Services at 601-200-6710:
• Urine culture—urine culture transfer device
• Stool for parasites—ECOFIX™ (green)
• Stool for culture—Para-Pak® (orange)
• Tissues, body fluids, environmental specimens, sputum, bronchial washes and brushes, catheter tips—sterile cup or sterile tube
• Blood culture—clearse site with ChloroPrep® and draw blood in the following:
  — Adults—Aerobic (blue) bottle + anaerobic (purple) bottle [this is 1 set (8 mL each)]
  — Pediatric patient or hard-to-stick patient—1 pediatric (yellow) bottle [this is 1 set (0.5-5 mL)]
• Chlamydia and/or Neisseria gonorrhoeae by strand displacement assay (SDA)
  — BD ProbeTec™ collection devices (male/female)
  — ThinPrep®
  — Dirty urine
• Aerobic culture—S/P® brand culture swab foam with Stuart media or Culturette® with gel (Healthlink® Transporter™) which is preferred if culture transport delay is anticipated.
• Anaerobic culture—Healthlink® Transporter™ (Culturette® with gel)
• Genital or Neisseria gonorrhoeae culture—Healthlink® Transporter™ (gel with charcoal culturette)

If in doubt concerning appropriate collection or transport of a specimen for microbiology, contact St. Dominic Hospital Reference Laboratory Client Services at 601-200-6710.

Pathology and Cytology Specimen Collection

• Tissue Specimens
  — All tissues are to be placed in a labeled, 10% formalin specimen container. These containers must be properly labeled with complete patient information as well as specimen type. A request form must be completely filled out with appropriate information for patient and must also include specimen type.
  — Courier will pick up all specimens at scheduled pickup times. If there is a tissue for a frozen section, this must be submitted fresh (without fixative) and sent to the laboratory as soon as possible usually by STAT courier.
  — 15-mL, 90-mL, 64-mL, and 168-mL size containers are available in the Histology Department and can be order on the Supply Order Request Form.

• Cytology Specimens
  — Specimens should be labeled as noted above for tissue specimens. Specimens received after 4 p.m. are processed the next day.
  • All sputums are to be collected as for culture (early-morning, “deep-cough” specimen).
  • Bronchial wash specimens should be collected in a sterile container with only saline added.
  • Pap smears should be collected in ThinPrep® vials or Pap kits.
  • Bronchial brush specimens should be placed in CytoLyt® fixative (provided by Cytology Department.)
  • All urine specimens should be collected in a sterile container and refrigerated until scheduled pickup by courier.
  • All body cavity fluids (pericardial, peritoneal, pleural, joint cyst fluids, CSF) are collected with NO preservative added and should be refrigerated until scheduled pick up by courier.

Procedure for Venipuncture

• Principle:
  — This procedure has been written for anyone who will be drawing a blood specimen for laboratory analysis. Our highly sophisticated and well-controlled laboratory technology is useless if the specimen presented is already riddled with error because of faulty identification or poor draw.
• Scope/Distribution/Related Documents:
  — This procedure will be distributed to all Outreach Manuals under specimen draw.
• Specimens:
  — Any specimens required for draw as requested by physician.
• Supplies and Equipment:
  — VACUTAINER® needle/holder, needle/syringe, butterfly (23 g or 21 g), blood transfer device, alcohol pad, cotton, tourniquet, and tubes necessary for drawing specimen for laboratory request.
• Records/Forms/Documents:
  — Laboratory request form for specimen draw.
• Safety/Hazards:
  — Universal precautions must be adhered to in performing any blood draw.
  — Gloves and a protective laboratory coat are required.
  — When entering rooms with isolation precautions, isolation protocol noted on the patient’s door must be adhered to.
  — Needles must never be recapped.
  — All needles are discarded in sharps container in patient area.

• Procedure:
  — Before a venipuncture procedure can begin, a test request form must be generated or a verbal request must be given by a physician. Request form will provide information needed to correctly identify the patient, necessary equipment needed, and draw requirements.
  — Please refer to facility policy for patient identification procedures to be performed. Each facility must have these policies for positive patient identification to ensure patient safety.
  — Before approaching patient for actual venipuncture, phlebotomist should put on gloves, collect all necessary supplies (including alcohol prep pad, cotton balls, tape, and tourniquet), and assemble draw equipment.
  — Carry assembled equipment and supplies to patient’s bedside. Apply tourniquet 3 to 4 inches above site where venipuncture will be made. To apply adequate pressure, both sides of tourniquet must be grasped near patient’s arm while left side is being tucked under right side. The loop formed should face downward toward patient’s antecubital area, and the free end should be away from venipuncture area in a position that allows it to be easily pulled to release pressure. Maximum amount of time tourniquet should remain in place is 1 minute. This will eliminate the possibility of hemoconcentrating the specimen that can alter some test results.
  — Preferred site for venipuncture is the antecubital fossa located anterior to the elbow. The 3 major veins located in the antecubital area are:
    • Median Cubital: Vein of choice because it is larger and it does not tend to move when needle is inserted.
    • Cephalic: May be more difficult to locate, except in obese patients, and may have a tendency to move.
    • Basilic: Least firm and is located near the brachial artery. Care must be taken not to accidentally puncture the artery.
  — In most patient’s, at least 1 of these veins can be easily located. Small prominent veins may be located in the back of hand. By asking patient to clinch their fists, the above mentioned veins will become more prominent. These veins can be located by sight and touch, touch being more important than ability to see the vein. Once an acceptable vein is located, touching vein will help you determine direction and depth of vein. This information will aid you when inserting needle. At this point, you must decide if you should use a VACUTAINER® needle, syringe and needle, butterfly needle, or a capillary draw to obtain specimen.

• VACUTAINER® Draw Requires

  VACUTAINER® Needle, Holder, and Tubes:
  — Assemble VACUTAINER® needle and holder by holding cartridge holder firmly. Twist to break seal. Remove cartridge cover (translucent). Threaded hub with back-end needle is now exposed.
  — Insert needle into the 1 time use disposable holder. Turn holder (barrel) clockwise until it is securely attached. Once needle is firmly attached pull safety shield away from needle and toward holder. Safety shield will remain in this position until activation.
  — Pull cap straight away from needle assembly without touching needle itself.
  — Follow venipuncture procedure for selecting and entering vein.
  — Insert needle into vein. Insert blood draw tubes into holder. Push tube forward. At this point, blood should enter tube.
  — When the last tube is filled, remove needle and immediately activate safety shield upon needle withdrawal from patient by pushing safety shield forward over needle. Using 1 hand (same one holding the holder) center the thumb on finger pad area of safety shield. For greatest safety, only use the wide textured finger pad area to activate...
safety shield. Activate safety shield by pushing cover forward toward needle until you hear and feel it lock. Visually confirm that needle tip is covered. Discard holder and needle into a sharps container.

—Follow venipuncture procedure for remaining instructions.

• Syringe and Needle Procedure:

—Syringes are often preferred over vacuum tubes when drawing blood from patient with small or fragile veins, the following procedure is required:

—Select correct size: Syringes range from 3 mL to 30 mL for laboratory drawing. Size must be chosen by amount of blood required. Needles provide a range from a 23 g for extremely fragile veins, and 22 g to 21 g for small but not so fragile veins.

—Assemble needle to syringe by twisting cap on needle and syringe, lacing needle onto syringe by screwing needle clockwise onto the syringe. Once needle is firmly attached pull safety shield away from needle and toward holder. Safety shield will remain in this position until activation.

—Follow venipuncture procedure for selecting and entering vein.

—Insert needle into vein, blood will appear in the hub of needle and plunger can be slowly pulled, using the hand that is free. It is important to anchor the hand holding syringe firmly on patient’s arm so that needle will not move when plunger is pulled.

—Once draw is complete, remove needle and immediately activate safety shield upon needle withdrawal from patient by pushing safety shield forward over needle. Using 1 hand (same one holding the holder) center the thumb on finger pad area of safety shield. For greatest safety, only use the wide textured finger pad area to activate safety cover. Activate safety shield by pushing shield forward toward needle until you hear and feel it lock. Visually confirm that needle tip is covered. Discard holder and needle into a sharps container.

—Follow the venipuncture procedure for remaining instructions.

• Butterfly Draws:

—When veins seem too fragile or small to draw with a syringe or if the patient (children) requires or requests the use of a butterfly, the following procedure is required:

—Select correct size; most butterflies used are 23 g (21 g may be used when drawing multiple tubes and patient’s veins are larger), and come individually packaged.

—Remove butterfly from package and carry syringe or VACUTAINER® holder and tubes to the bed.

—Remove protective sheath from needle and hold the winged tips together when inserting needle.

—If you will be using the syringe for draw, it should be attached to the butterfly by twisting needle at end of tubing. Syringe can then be screwed into the end of tubing clockwise. Once needle is inserted into vein, you may want to anchor it by placing a piece of tape across the winged tips. Gently pull on syringe until it is full. Remove tourniquet and then carefully remove tape from across the winged tips, gently pull needle from vein while covering venipuncture site with a cotton ball and applying pressure immediately activate safety shield upon needle withdrawal from patient by pushing safety shield forward over needle. Using 1 hand (same one holding the holder) center the thumb on finger pad area of safety shield. For greatest safety, only use the wide textured finger pad area to activate safety cover. Activate safety shield by pushing shield forward toward needle until you hear and feel it lock. Visually
confirm that needle tip is covered.
Discard holder and needle into a sharps container.
—Follow venipuncture procedure for remaining instructions.
• Syringe must be removed from the butterfly by turning syringe counterclockwise.
Immediately attach a blood transfer device to syringe and transfer blood to appropriate tubes. Butterfly apparatus must be disposed of in a puncture resistant container.
• If using multiple specimen luer adapter a 1 time use only disposable holder must be attached to the luer adapter. Once all tubes are drawn and safety shield is properly activated butterfly and holder will be placed in a sharps container.
• Venipuncture:
  —Follow venipuncture procedure for selecting and entering vein.
  —If a minute has passed before an acceptable vein is found, release tourniquet before cleaning site with a 70% alcohol prep pad. Clean venipuncture site by using a circular motion starting at inside of venipuncture site moving outward to cover vein area. Allow alcohol to dry, otherwise it may cause a stinging sensation for the patient, and/or cause hemolysis in the specimen. If additional palpation (feeling of the vein) is needed, you should clean the gloved end of finger for location of vein with alcohol before retouching site.
  —Immediately prior to entering vein, the plastic cap of needle is removed and the point of needle is visually examined for any defects. Needle is then positioned for entry into vein with bevel facing upward.
  —Needle holder or syringe is held securely in the dominate hand with thumb on top and remaining fingers below. After insertion is made, fingers can be placed against the patient’s arm to provide stability while tubes are being moved in holder, or the plunger of syringe is being pulled back. Use thumb of non dominant hand to anchor selected vein while inserting needle. A vein that moves to the side is said to have “rolled.” When vein is securely anchored, needle is inserted, bevel up at an angle of 15° to 30° depending on the depth of vein. This should be done in a smooth movement so patient only briefly feels the stick. Vein has been entered when you feel a lessening of resistance to needle movement.
  —Once vein has been entered, the hand anchoring vein can be moved and the other hand used to anchor vein while the prominent hand can be used to push vacuum tubes into holder, or to pull back syringe plunger. To prevent blood from refluxing back into needle, tubes should be held at a downward angle while they are being filled. Correct order of draw should be followed when using VACUTAINER® tubes:
    • Red-top tube (no additives)
    • Blue-top tube (coagulation)
    • Green-top tube (heparin)
    • Lavender-top tube (EDTA)
    • Red/grey-top tube or gold-top tube (serum gel tube)
    • Grey-top tube (potassium oxalate/sodium fluoride)
  —If a syringe is being used, the order changes to:
    • Light blue-top tube (sodium citrate)
    • Lavender-top tube (EDTA)
    • Green-top tube (heparin)
    • Gray-top tube
    • Plain, red-top tube
    • Serum gel tube
  —Before removing needle, remove tourniquet by pulling the free end and tell the patient to relax his or her hand. Failure to remove tourniquet prior to removing needle may produce a hematoma. Cover venipuncture site with a cotton ball, apply pressure, and withdraw needle. Do not apply pressure while needle is still inserted in the vein. Apply pressure until any bleeding has stopped. Bleeding at the venipuncture site should stop within 5 minutes. Before applying a bandage or a piece of tape over the cotton ball, check the site to make sure that all bleeding has stopped.
  —Instruct patient to remove bandage within 1 hour and to avoid using this arm to carry heavy objects during that period.
—Dispose of contaminated needle and all sharps in appropriate puncture resistant biohazard sharps container located in patient’s room or on your tray. All needles used have a safety shield that will be activated immediately after removal of the needle from vein. All other supplies such as alcohol pads, used cotton balls, gloves can be disposed of in regular trash unless contaminated with >5 mL of blood. Always remember to thank patients for their cooperation.

—All tubes drawn must be labeled before leaving the patient. Labeling may be done with a computer generated label or by writing on the tube with a pen. Information on specimen label should include patient’s name, identification number (medical record #), date and time of draw, and initial or computer code (if phlebotomist from laboratory) of the person drawing specimen.

—Venipuncture procedure is complete when blood is delivered back to the laboratory. All specimens must be in properly labeled biohazard bags designed for specimen transport.

• Safety-Lok™ Shield Activation:
  —One-Handed Technique—Hold tubing in hand and advance translucent yellow safety shield with thumb and index finger until a click is heard indicating that needle is completely retracted over needle.
  —Modified One-Handed Technique—Apply pressure to site using your fingers. Withdraw blood collection set by grasping translucent yellow safety shield with thumb and index finger. With opposite hand grasp tubing between thumb and index finger while pushing safety shield forward until a click is heard indicating that needle is completely retracted and safety shield is locked in place.

• Limitations:
  —Age-specific criteria must be taken into consideration when a decision is being made in how to obtain specimen.

• References:

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• Processing of Cytology Specimens
  —During normal working hours, cytology specimens are processed by the cytotechnologist until 4 p.m. Specimens received in laboratory after 4 p.m. will be processed the following work day.
  —No fixative is added to cytology specimens, only slides.
  —All cytology specimens may be refrigerated until pickup.