

# STANDARD OPERATING PROCEDURE

## Phlebotomy / Blood Collection

Phlebotomy Department

<b>Laboratory Name:</b> Your Lab or Collection Point Name	<b>File/Accreditation:</b> 1234
<b>Document ID:</b> 001	<b>Version:</b> 1.0
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### 1. PURPOSE

To establish standardized procedures for blood collection by venipuncture and capillary puncture, ensuring patient safety, specimen integrity, and compliance with regulatory requirements. This procedure applies to all healthcare personnel performing phlebotomy in the laboratory and patient care areas.

### 2. SCOPE

This SOP applies to blood collection for the following patient populations: **Adults (18-65 years)**, **Pediatrics (Infants & Children)**, **Geriatrics (65+ years - fragile vein protocol)**, **Neonates (Capillary heel stick collection)**, **Obese patients (Difficult access protocol)**, **Oncology/IV patients (Avoid venipuncture on same side)**, **Patients with bleeding disorders (Extended pressure protocol)**, **Patients with mastectomy (Avoid affected side)**. Collection methods include: **Venipuncture (Evacuated tube system)**, **Venipuncture (Syringe method)**, **Capillary puncture (Finger stick)**, **Capillary puncture (Heel stick for infants)**, **Blood culture collection**, **Arterial blood gas (ABG) collection**.

### 3. RESPONSIBILITIES

- **Phlebotomists/Lab Staff:** Perform blood collection according to this SOP, maintain competency, ensure proper identification, and follow safety protocols.
- **Supervisor/Lab Manager:** Ensure staff training, competency assessment, and availability of adequate supplies.
- **Quality Assurance Officer:** Monitor compliance, investigate incidents, and review/update SOP annually.

### 4. EQUIPMENT AND MATERIALS

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- Vacuum extraction tubes (Vacutainers) - Various colors
  - Multi-sample needles (21G, 22G, 23G)
  - Butterfly needles / Winged infusion sets (23G, 25G)
  - Syringes (3mL, 5mL, 10mL)
  - Tourniquets (Latex-free, reusable)
  - 70% Isopropyl alcohol swabs/70% Alcohol prep pads
  - 2x2 Gauze pads (Sterile)
  - Adhesive bandages/Medical tape
  - Biohazard Sharps Container (Puncture-resistant)
  - Specimen transport bags with biohazard labels
  - Personal Protective Equipment (PPE) - Gloves, gowns, masks
  - Tube holder/Adapter
  - Permanent marker/Specimen labels
  - Ice pack/Coolant (for temperature-sensitive specimens)
  - Centrifuge tubes/Racks

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## 5. PROCEDURE

### 5.1 Patient Identification (Critical Step)

Verify patient identity using two unique identifiers (full name, date of birth, or medical record number). Ask patient to state their full name and date of birth. Compare with requisition form and wristband. For unconscious/unidentified patients, follow hospital protocol and verify with nursing staff.

### 5.2 Patient Preparation

Explain procedure to patient. Confirm fasting status if required (8-12 hours for glucose/lipid profiles). Position patient comfortably in phlebotomy chair with arm supported. Ask about allergies (latex, antiseptics, adhesive).

### 5.3 Site Selection

Select appropriate vein: Median cubital, cephalic, or basilic veins in antecubital fossa. Avoid areas with hematoma, edema, scars, burns, or IV lines. Apply tourniquet 3-4 inches above site. Palpate to locate vein (should feel bouncy and resilient). Release tourniquet if applied for >1 minute.

### 5.4 Hand Hygiene and PPE

Perform hand hygiene with soap and water or alcohol-based hand rub. Don clean gloves. Wear additional PPE (mask, gown) as indicated by isolation precautions.

### 5.5 Site Disinfection

Clean site with 70% alcohol prep pad using concentric circles moving outward. Allow to air dry completely (30 seconds) – DO NOT fan or blow on site. Do not palpate vein after disinfection.

### 5.6 Venipuncture Procedure

Reapply tourniquet. Anchor vein 1-2 inches below puncture site. Insert needle at 15-30 degree angle with bevel up. Feel for “pop” as vein is entered. Hold holder steady and push tube onto needle. Fill tubes in correct order of draw: See below the Point Number 6

### 5.7 Tube Mixing

Gently invert tubes with additives 5-8 times immediately after collection. Do not shake vigorously.

### 5.8 Needle Removal and Post-Care

Release tourniquet before removing needle. Place gauze over site, withdraw needle gently, and immediately activate safety device. Apply firm pressure for 2-3 minutes (5 minutes for patients on anticoagulants). Apply bandage.

### 5.9 Specimen Labeling

Label tubes at patient bedside. Include: Patient full name, date of birth, date and time of collection, collector's initials. Do not pre-label tubes.

## 6. ORDER OF DRAW (Standard)

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1. **Blood Culture Bottles** (sterile collection – yellow/black tops)
2. **Light Blue Tubes** (Sodium citrate – coagulation tests)
3. **Red/Gold/SST Tubes** (Serum with/without clot activator)
4. **Green Tubes** (Heparin – plasma chemistry)
5. **Lavender/Purple Tubes** (EDTA – hematology)
6. **Gray Tubes** (Glycolytic inhibitor – glucose, lactate)

## 7. SPECIAL POPULATIONS

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### Pediatrics/Neonates:

Use smallest needle possible (23-25G butterfly). For capillary collection in infants, use heel stick with lancet. Warm heel for 3-5 minutes before puncture. Collect in microtainers.

### Geriatrics/Fragile Veins:

Use butterfly needle with syringe for better control. Apply minimal tourniquet pressure. Avoid multiple attempts.

### Difficult Venipuncture:

Warm site for 3-5 minutes. Use vein visualization device if available. Maximum 2 attempts per phlebotomist.

## 8. SAFETY PROTOCOLS

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- Standard Precautions (Hand hygiene, PPE)
- Needlestick Prevention (Safety devices, no recapping)
- Sharps Disposal (Immediate disposal in sharps container)
- Biohazard Waste Management
- Spill Management (Blood/Body fluid spill kit)
- Hand Hygiene Protocol (Before and after each patient)
- Exposure Control Plan (Needlestick injury protocol)

## 9. SPECIMEN HANDLING AND PROCESSING

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- Gentle inversion (5-8 times for additive tubes)
- Proper labeling (Patient name, date, time, initials)

- Centrifugation requirements (Time, speed, temperature)
- Temperature requirements (Room temp, refrigerated, frozen)
- Transport to laboratory (Time limit: within 2 hours)
- Aliquot preparation (For send-out tests)
- Storage before processing (Refrigerator, freezer)

## 10. QUALITY CONTROL

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- Patient identification verification (Two identifiers)
- Specimen rejection criteria documentation
- Daily equipment checks (Centrifuge, refrigerator temps)
- Expiration date checks (Tubes, reagents)
- Competency assessment documentation
- Incident reporting system

## 11. COMPLICATIONS AND TROUBLESHOOTING

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- Hematoma prevention and management
- Failed venipuncture (Maximum 2 attempts)
- Syncope (Fainting) response procedure
- Hemolyzed specimen protocol (Rejection criteria)
- Clotted specimen protocol
- Nerve injury avoidance (Proper site selection)
- Allergic reaction to antiseptic/tape

## 12. SPECIMEN REJECTION CRITERIA

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- Unlabeled or mislabeled specimen
- Hemolyzed specimen
- Clotted specimen (for anticoagulated tubes)
- Insufficient quantity
- Wrong tube for test ordered
- Improper transport/storage temperature
- Exceeded transport time limits

## 13. ADDITIONAL GUIDELINES

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This is Comprehensive List of SOP's for Phlebotomy with Brief. You can Generate your own SOPs as per your Requirements in just clicks. Visit [LabTestsGuide.com/sops](http://LabTestsGuide.com/sops)

## 14. REFERENCES

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- CLSI Standard GP41: Collection of Diagnostic Venous Blood Specimens, 7th Edition
- OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030)
- Clinical Laboratory Improvement Amendments (CLIA) Regulations
- WHO Guidelines on Drawing Blood: Best Practices in Phlebotomy

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