**Blood Specimen Collection**

**Blood Collection Methods:**

*Venipuncture* is the most common method of obtaining a diagnostic blood specimen. Use of the evacuated blood collection system is preferable because it allows the blood to pass directly from the vein into the evacuated tube eliminating the need for specimen transfer. The system has three components: a sterile needle, a holder that secures both the needle and the tube, and the evacuated tube with a premeasured vacuum. The needle selection is based on the patient’s physical characteristics and the amount of blood needed. When the patient has poor venous access due to fragile or thready veins, a butterfly collection set together with a syringe should be used. This system has two components: butterfly collection set and the plastic syringe. After collection, blood is transferred to the appropriate tubes. Due to a higher rate of injury to healthcare workers, it is recommended that butterflies only be used when clinically necessary.

*Skin puncture* (fingerstick) blood is a mixture of blood from arterioles, venules and capillaries and contains interstitial and intracellular fluids. Skin puncture samples may be obtained to determine blood chemistry, hematology and/or blood gas values in neonates and young children when venous or arterial access is severely limited. These specimens are commonly used in patients with severe burns, extreme obesity, thrombotic tendencies, some malignancies using venous access for therapeutic purposes, geriatric or others with inaccessible or fragile superficial veins. If a patient is dehydrated or has poor peripheral circulation, it may be impossible to obtain a representative blood sample from a skin puncture.

**Site selection**

Capillary punctures are to be performed on the fleshy pad of the fingertips in patients 12 months of age and older. Sides of the fingers should be avoided due to the following: 1) less tissue between skin and bone makes it more likely to injure periosteum, which makes a procedure more painful and may increase the rate of possible complications; 2) side of the finger incisions may be associated with injury to distal neuron-vascular bundle, increasing the likelihood of more prolonged bleeding and sensation disturbance at the finger-tip. Third or fourth finger preferred.

For infants up to 12 months, only medial or lateral plantar surface of the heel should be used. Avoid back curvature of the heel, which is the side of Achilles tendon attachment.

If arterialized capillary blood is needed (as for arterial blood gas analysis), pre-warmed ear lobe is the preferred site of collection.

In general, avoid bruised or traumatized sites.

**Other helpful tips**

- Pre-warm the area for better blood flow.
- Avoid excessive squeezing.
- Use retractable incision device that does not penetrate deeper than 2 mm