Coagulation is a process that ca by uses the blood to change its form from liquid to a semisolid or gel- like substance also known as a clot/clotting

Types of Additives

1. **Anticoagulant**- Prevent blood from clotting/ Let the blood in collection tube stay in liquid form

2. Clot Activators- Enhance the process of clotting or coagulation (Ex.Silica=absorbs moisture/ Desiccant)

3. Thixotropic gel- Separate the layers of blood

According to CLSI (Clinical Laboratory Standards Institute) there is an order of draw that should be followed to prevent cross contamination of the blood tubes.

Order of draw is by color (mostly) But more importantly by additive

Order of Tubes

1. A. Yellow (Sterile) (8-10 inversions)

   Additive: SPS - Sodium Polyethylene Sulfate
   Specimen: Whole Blood
   Laboratory Uses:Blood and bodily fluid cultures

1. B. Yellow (Non-Sterile) (8-10 inversions)

   Additive: ACD- Acid citrate dextrose
   Specimen:Whole Blood
   Laboratory Uses:DNA, Human leukocyte antigen phenotyping, and paternity testing

3. Orange (5-6 inversions)
Additive: Thrombin (Clot activator) or Thrombin w/ Gel
Specimen: Serum
Laboratory Uses: STAT Serum Chemistries
4.Tan (8-10 inversions)
Additive: EDTA K2, (Potassium EDTA)
Specimen: Plasma / Laboratory Uses: Lead

Correct order of Draw:

1. Blood culture tube- Yellow SPS or (sterile)
2. Coagulation tube- Light Blue, Sodium Citrate
3. Serum- Tube w/o clot activator (Red:Glass) & w/ clot activator (Red:Plastic), Serum Separator Tube (SST)
4. Plasma Separator Tube (PSTs) w/ Heparin & Heparin Tube (Green)
5. EDTA- Tube w/o gel separator (Lavender, Pink,) & EDTA tube w/ Plasma Preparation Tubes (PPTs) (White)
6. Glycolytic inhibitor (Gray)

Blood Culture Tubes- Prevent cross contamination
Light Blue Tubes- To prevent contamination from other additives that can interfere
Red Glass or Plastic, Gold,Red-Gray, SST- Red Glass, contain clot activators that could interfere with other testing
Green or Light Green Tubes- Heparin will not interfere with EDTA tubes
Lavender Tube- EDTA affects calcium & Potassium levels if drawn before

- Position device on palmar surface on forearm
- Blot Blood in 30sec. Intervals until bleeding stops
- Remove blood pressure cuff
- Apply bandaid
- Dispose sharpe into sharps container
- Remove gloves
- Document procedure

Glucose Test Procedure

- Verify physicians order
- Greet patient
- ID yourself & procedure
- ID patient- Full name/ DOB/
- Assemble equipment & supplies- sharps container/ test strip& glucose machine/ lancet/ alcohol pad/ bandage/ gloves/ site of puncture
- Washing hands & Donning PPE

- Select incision site & palpate
- Remove tourniquet- 60sec.
- Disinfect incision site
- Connect needle to connection holder, inspect needle (use appropriate gauge)
- Reapply tourniquet
- With fingers of non-needle carrying hand pull skin taut
- With needle carrying hand insert needle at the appropriate angle
- Fill tubes in correct order of draw
- Remove tourniquet- 60sec.
- Release tourniquet prior to withdrawing needle
- Remove needle, apply safety cap if there is one
- Apply direct pressure on incision site
- Dispose of sharps and contaminated materials into appropriate containers
- Mix tubes (correct number of inversion)

pain.

- **Seizures-** A patient may undergo seizures while procedure is performed

- **Hematoma**-(bruse)Occurs due to injury caused by the needle insertion, leading to blood external to the blood vessels and within the tissue causing internal bleeding of the tissue

- **Hemolysis**- A breakdown of red blood cells. The breakdown causes release of hemoglobin

- **Hemoconcentration**- increase in the concentration of formed elements

- **Vasovagal reaction**- A patient experiences fainting as a result of shock or pain from the needle stick

- **Bone Infection**: if a bone is hit with a needle or lancet, it may cause bone infection and inflammation(osteomyelitis)

- **Inability to draw blood**- A phlebotomist may not be able to draw blood from a patient on the 1st attempt. Follow facility policy on how to proceed. Some facilities allow for a 2nd draw

- **Compartmental syndrome**- This can occur as a result of excessive bleeding post- phlebotomy procedure. It occurs when more than normal pressure develops in a particular space (mainly limbs) the excessive bleeding causes a buildup of high pressure and compresses the underlying