Collection Guidelines for Routine & Special Coagulation Testing

• Best samples come from **peripheral stick** with evacuated tube system
  – 19 to 22 gauge needle (smaller or bigger could cause **hemolysis**)

• If peripheral stick is not possible:
  – Syringe draws
    • \( \leq 20 \text{ mL syringe} \)
    • Add blood to anticoagulant \( \leq \text{ one minute} \)
    • **DANGER:** Have greater potential for hemolysis and platelet activation = **hemolyzed or clotted tube**
  – Vascular access device
    • If drawing from central line, flush with 5 mLs saline and discard first 5 mLs or discard 6 dead space volumes
    • If drawing from a saline lock, discard 2 dead space volumes
    • **DANGER:** Have potential for sample dilution or contamination
Collection Guidelines for Routine & Special Coagulation Testing

• **Be sure tube is filled completely regardless of tube size** *(i.e. 2.7 or 1.8 mL)*
  - 9:1 = 9 parts blood to 1 part anticoagulant
  - <90% fill UNACCEPTABLE and WILL BE REJECTED
    • Underfilled tubes = **prolonged clotting times** *(i.e. PT, PTT)*
  - **NEVER** combine two underfilled tubes to make one filled tube

• Draw a discard tube before drawing light blue stoppered tubes
  - 3 mL clear discard tube preferred
  - Discard will fill “dead space” of winged collection set tubing
    • **DANGER:** If not, could result in underfilled tube = **prolonged clotting times** *(i.e. PT, PTT)*
Collection Guidelines for Routine & Special Coagulation Testing

- Avoid prolonged tourniquet use
- Avoid “digging” to find the vein
  - *DANGER:* Can cause activation of clotting factors = *clotted tube*
- Mix anticoagulant with whole blood promptly and thoroughly – invert gently, do not shake
- Samples should be labeled in the patient’s presence
Transportation & Timing Guidelines for Routine & Special Coagulation Testing

• Send samples at **ROOM TEMPERATURE**
  – **DANGER:** Sending samples on ice will activate the sample = **shortened clotting times** (i.e. PT)

• Samples should be sent within one hour of collection
  – Samples containing heparin should be sent *immediately* after collection
Transportation & Timing Guidelines for Platelet Function Testing

- **PFA-100 & Platelet Aggregation Samples**
  - **CANNOT** be sent through pneumatic tube system
  - Must be **HAND-CARRIED** to designated site for courier pick
  - Samples must be in lab within 3 hours of collection
  - Testing available **Monday thru Friday** only
    - **Platelet Aggs** must be in lab by **1 pm**
    - **PFAs** must be in lab by **3 pm**
  - Call Special Coag Lab at 317-491-6000 for more information
Reasons Why Routine & Special Coagulation
Samples Would Be Rejected

• **Clotted sample**
  - Sodium citrate takes out calcium from patient’s blood, which is required for clot formation
    • If sample is not mixed well, anticoagulant cannot remove calcium and sample will clot
    • Digging around for vein can cause factors to activate – not enough sodium citrate to overcome that and sample will clot
  - If sample is collected properly, calcium is permanently removed. The sample will not clot over time!

• **Hemolysis** – falsely **shortened** clotting times

• **Underfilled** – falsely **prolonged** clotting times

• Sample contains **excess saline or heparin** - falsely **prolonged** clotting times

• **Sample not labeled/Mislabeled** with patient identification

• **Incorrect tube type**
  - Correct = 3.2% sodium citrate, light blue stoppered PLASTIC tube.
  - Incorrect = Any other color of stoppered tubes, (i.e. lavender, green, red, dark blue), glass sodium citrate tubes
Rejected Coagulation Samples

- Clotted Sample
- Hemolyzed Sample
- Incorrect Tube Type
- Underfilled Sample
- Sample Not Labeled
Collection Guidelines for Plavix (P2Y12) & Aspirin Platelet Inhibition Testing

• Call the Special Coag Lab (491-6000) for proper blue top collection tubes
  – Draw **TWO**, 1.8 mL Greiner sodium citrate (3.2%) tubes **AFTER** drawing a discard tube
  – **Samples must be received in lab by 3 pm AND within 3 hours of collection**

• Draw blood by peripheral stick
  – Get good blood flow-use **ONLY** 21 or 19 gauge needle
  – Must use extra 3.2% sodium citrate tube as discard
  – If the vacuum does not seem to be working, push the tube harder onto the needle
  – When drawn correctly, tube will fill to black line (about ½ up the tube) – it will not overfill or underfill

• Draw purple EDTA tube after the blue tops

• Label ALL tubes with patient identification

• Place all samples in bag and label with collection information (on sticker provided by Special Coag)

• Hand carry samples at room temperature to Blood Bank – **DO NOT** send through pneumatic tube system
  – **DO NOT** place in bucket – deliver to BB tech - tell them to notify 491-6000
  – BB tech calls 491-6000 to request STAT courier pick-up
  – Couriers will pick up the samples from BB and deliver to IU Health Pathology Laboratory

Patients with hematocrits <33% should not be tested for Plavix Inhibition.
Call the Special Coag Lab for more information.
Testing is available Monday – Friday, 8 am – 3:00 pm
Samples must be received within 3 hours of collection
What Not to Do When Collecting Plavix/Aspirin Testing Samples

- Tubes not labeled with patient identification
- Tubes Over/Underfilled
- Sent through pneumatic tube system