



Clinical Practice Change Alert

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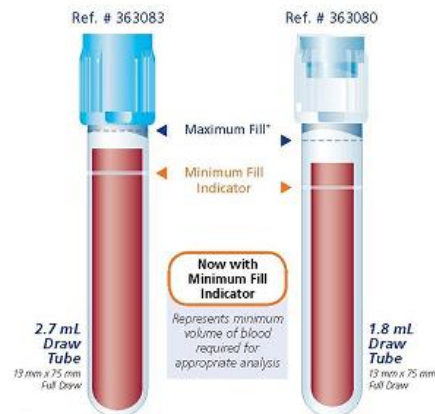
CHANGE in BLOOD COLLECTION TUBE for COAGULATION TESTS

Background Information:

- The Hematology Laboratories at HSC and SBH will be phasing out glass sodium citrate tubes and switching to plastic sodium citrate tubes for coagulation testing to avoid breakage during centrifugation.

Change in Test Procedure:

- The blood tube device for coagulation testing will be changed to a **plastic sodium citrate** tube (blue top) 1.8 mL and 2.7 mL size.
- When placing your next order, the plastic tubes are available from BD (Becton, Dickenson and Company):
 - **1.8 mL plastic tube** (Product # 363080)
 - **2.7 mL plastic tube** (Product # 363083)
- Minimum fill indicator lines are shown
- Do not pop tube top to fill with blood
- A discard tube is required when bloodwork is drawn using a blood collection set (eg. butterfly collection set) and from arterial or PICC line



DSM Contact Information:

Please contact the laboratory with any questions at 204-787-1564 or

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FAQ - Changing from Glass to Plastic Collection Tubes for Coagulation Tests

What is the minimum volume of blood that should be collected into a BD Vacutainer® sodium citrate tube? BD tubes are designed to yield within $\pm 10\%$ of the stated draw volume on the label of the additive tube throughout the entire shelf life. (CLSI guideline - Evacuated Tubes and Additives for Blood Specimen Collection-Fifth Edition H1-A5, 2003).

What do the lines mean on BD Vacutainer® Plus sodium citrate tubes? The etched fill indicator on the plastic citrate tubes indicates the minimum acceptable blood volume in the tube.

Is a discard tube needed if the only tube being collected is a coagulation tube? There have been recent articles indicating that drawing a discard tube is not necessary before drawing the sodium citrate tube. In the CLSI coagulation document (H21-A5) it is still recommended that the citrate tube is the second or third tube drawn. However, in the CLSI guideline for Venipuncture Collection (H3-A6) it states that for routine PT and APTT, the first tube drawn may be used for testing.

It is also important to ensure a discard tube is drawn when a blood collection set is used and only a citrate tube is ordered, as the tubing may contain up to 0.5 mL of air that will be drawn into the tube and displace blood volume.

How can the 1.8 mL and 2.7 mL BD Vacutainer® Plus Coagulation Tubes be differentiated? The 1.8 mL tube has a light blue rubber stopper covered with a translucent shield and the 2.7 mL tube has a light blue rubber stopper covered with a solid light blue Hemogard™ closure.

What is the blood to additive ratio in the sodium citrate tubes?

The blood to additive ratio is 9 parts blood to 1 part sodium citrate.

What is the additive volume in the BD Plus sodium citrate tubes?

The 1.8 mL draw plus sodium citrate tube contains 0.2mL of sodium citrate, and the 2.7 mL draw contains 0.3 mL of sodium citrate.

What is the effect of hemolysis on coagulation results? Hemolyzed specimens should not be processed since there could be activation of the clotting factors. Lipemic or icteric specimens may also interfere with the instrumentation's optical system affecting the coagulation specimen result.

What constitutes a tube inversion? An inversion is one complete turn of the wrist, 180 degrees, and back. BD recommends that citrate tubes be inverted 3 to 4 times.

How long should the tourniquet be left on for drawing coagulation specimens?

Placing the tourniquet for longer than 1 minute can lead to changes in the concentration of coagulation protein in the plasma as well as platelet activation which can result in erroneous coagulation results.

Can the sodium citrate tube be used when a patient exhibits platelet clumping in an EDTA tube? Yes, the sodium citrate tube can be used to get an accurate platelet count if a patient's platelets clump in the EDTA tube. The platelet count from the sodium citrate tube should be multiplied by 1.1 to account for the different blood to additive ratio in the citrate tube.

My patient is a hard stick and I didn't get enough in one tube so I tried again with another tube but it still isn't to the line. Can I mix these two tubes together? No. Mixing two short draw tubes together will result in an excess of anticoagulant in the sample.