How to Collect a Quality Sample
Prevent Clotting with Anticoagulant Tubes

What are clotted specimens?
An inappropriately clotted blood specimen is one in which clotting occurs in a tube containing an anticoagulant. A specimen clots when there is not adequate mixing of the anticoagulant in the tube.

What causes a specimen to be clotted?
- Inadequate mixing of the tubes
- No mixing of tubes
- Use of expired blood collection tubes

How can clotted specimens be prevented?
- Gently invert each blood specimen 6-8 times to allow adequate mixing of the blood. Mix blood IMMEDIATELY after collection.
- Fill all blood collection tubes to the fill line. (This step prevents the dilution of the blood components, which can result in altered results).

What labs are primarily affected?
A variety of laboratory tests are adversely affected, resulting in invalid test results. (This then requires the collection of another specimen from the patient).

Examples of adverse outcomes associated with clotted specimens
- Coagulation: Prolonged clotting times for PT, aPTT, TT and fibrinogen
- Hematology: Erroneous WBC count and RBC indices; Decreased platelet count

Effective date: May 18, 2011
Submitted by: Grace Bostic, Quality Assurance Coordinator, Clinical Pathology, RO
Elizabeth Sykes, MD, Medical Director, Clinical Chemistry, RO