### Indications for Ordering

- Use to evaluate prolonged clotting times such as prothrombin time (PT) and/or partial thromboplastin time (PTT) when cause is unknown
- Most useful for the workup of patients with unexpected prolonged clotting times
- Condition-specific testing is preferred when the patient has a known coagulation disorder or a clear bleeding presentation

### Test Description

Electromagnetic mechanical clot detection/qualitative hemagglutination/platelet agglutination/microlatex particle-mediated immunoassay

### Tests to Consider

#### Typical testing strategy

- Reflexive panel beginning with basic clotting times (PT, PTT, dilute Russell viper venom time [DRVVT]), lupus anticoagulant testing, fibrinogen, and d-dimer
- Based on the patterns observed, additional reflexive testing may include coagulation factor assays and von Willebrand factor testing
- Reflexive test selection by ARUP Hemostasis/Thrombosis medical directors

#### Primary test

**Prolonged Clot Time Reflex Panel 2014318**

- Determine the cause of a prolonged PT or PTT
- The reflexive panel provides a comprehensive workup to determine the etiology of prolonged clotting times, including lupus anticoagulants and factor deficiencies or inhibitors
- In rare circumstances in which a definitive cause for prolonged clotting time is not identified by testing available within the panel, appropriate follow-up testing will be recommended in the customized panel interpretation

### Disease Overview

- Clotting time tests such as PT and/or PTT are commonly performed in the outpatient or hospital setting for a variety of reasons, including
  - Workup of a bleeding tendency
  - Workup of antiphospholipid syndrome
  - Presurgical evaluation
  - Guidance for blood product replacement
  - Monitoring of anticoagulant medications
- Prevalence of prolonged clotting times varies depending on the setting and on patient- and laboratory-specific factors
- Prolonged clotting times of unclear etiology may require further evaluation to determine cause and to exclude clinically significant bleeding disorders

### Symptoms

Symptoms associated with prolonged clotting times depend on the underlying etiology

- Patients with a lupus anticoagulant associated with antiphospholipid syndrome may be asymptomatic or may have elevated thrombotic risk
  - Such patients are generally not at increased risk for bleeding
- Patients with a factor deficiency or inhibitor are at increased risk for bleeding

### Diagnostic issues

- This reflexive panel was designed to evaluate prolonged clotting times (PT and/or PTT), particularly in presurgical or other settings where there is not strong clinical or other laboratory evidence suggesting a specific coagulation disorder
- Benefits of this type of panel in these settings include
  - Greater standardization and cost-effectiveness in the assessment of prolonged clotting times
  - More timely diagnosis, avoiding multiple rounds of testing
  - Expert interpretation by medical directors in the lab performing the testing
- A completed patient history form submitted with the test order will allow for optimal panel interpretation and correlation with the clinical setting
- If the patient has a known coagulation disorder or there is strong clinical or other laboratory evidence of a specific coagulation disorder (such as a clear bleeding presentation), condition-specific testing is preferred
Physiology

- Clotting times such as PT and/or PTT enable evaluation of coagulation reactions and are dependent on:
  - Presence and function of coagulation factors, including fibrinogen
  - Phospholipid support for the coagulation reactions
  - Calcium availability (affected by specimen collection tube/anticoagulant)
- Problems with any of these components can result in clotting time prolongation

Test Interpretation

Results

- Reflexive test selection and panel interpretation by ARUP Hemostasis/Thrombosis medical directors
- Customized panel interpretation includes the clinical significance of any abnormalities identified and recommendations for follow-up testing, if indicated
- Reference intervals will be provided for each test performed, including age-stratified reference intervals, when appropriate

Limitations

- Current anticoagulant medications may interfere with testing and cause erroneous results
- Recent transfusion or factor replacement may affect results
- Results may be inaccurate in the event of inappropriate specimen collection and handling:
  - Clotted specimens (serum specimen or traumatic venipuncture)
  - Line draws (specimen may be contaminated with heparin or IV fluids)
  - Incorrect anticoagulant (anything other than sodium citrate plasma)