

Date: April 24, 2012
To: Central Zone – Red Deer and Sylvan Lake: Physicians
From: AHS Laboratory Services
Re: Quantitative D-Dimer Test

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Key Messages:

On May 1, 2012 the Red Deer Regional Hospital will begin coagulation testing on new instrumentation resulting in changes to the Quantitative D-Dimer reporting units, reference range and cut-off value for exclusion of venous thromboembolism (VTE). The changes to the report will be as follows:

Reference ranges: < 234 ng/mL

A D-Dimer BELOW 230 ng/mL may be used with a Standardized CLINICAL ASSESSMENT and/or imaging studies to help exclude venous thromboembolism (VTE).

Values ABOVE 230 ng/mL are not diagnostically useful in VTE assessment.

Why this is important:

The primary use of this test is in ruling out the diagnosis of Venous Thromboembolic (VTE) Disease and the test must be used in conjunction with a Standardized Clinical Assessment (see attachment) for Deep Vein Thrombosis (DVT) or Pulmonary Embolism (PE), Risk Scores.

The D-Dimer test is designed primarily for Emergency Department use.

Action Required:

The established cut-off value of less than 230 ng/mL has been validated to rule out DVT/PE in patients with LOW or MODERATE risk scores. Patients with a clinical assessment with a LOW risk score for DVT, or with a LOW, MODERATE score of PE are eligible for quantitative D-Dimer testing; a D-Dimer result, in these patients, BELOW the cut-off value (230 ng/mL) has a negative predictive value of greater than 99% for VTE.

Patients with **HIGH RISK scores for DVT/PE should not have quantitative D-Dimer testing.**

D-Dimer testing should not be requested in unselected patients with no pre-test clinical assessment. High D-Dimer levels are common in hospitalized in-patients, cancer patients, post-operative patients, sepsis/inflammation, myocardial infarction, pregnancy, and patients on oral contraceptives.

A markedly elevated D-Dimer test result is useful in making a diagnosis of Disseminated Intravascular Coagulation (DIC) in conjunction with the CBC, peripheral blood smear, PT and PTT, and clinical features.

The Clinical Assessment for DVT/PE risk score is determined prior to ordering the D-Dimer test, and the score must be entered into the Meditech system with the D-Dimer test order.

Inquiries and feedback may be directed to:

Dr. S.A. Morris, Pathologist, by phone at 403-343-4515

This bulletin has been reviewed and approved by:

Dr. James Wesenberg, AHS Provincial Medical / Scientific Director, Laboratory Services

**Pre-test (D-Dimer) Clinical Assessment for
Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE)**

Deep Vein Thrombosis (DVT)	Score
Active cancer (Palliative, ongoing or within last six month)	1
Paralysis, paresis or recent immobilization of the lower extremity (3 or more days)	1
Recently bedridden for 3 or more days or surgery within 12 weeks	1
Localized tenderness along deep veins	1
Leg Swollen	1
Calf swelling greater than 3 cm on affected side (measured 10 cm below tibial tuberosity)	1
Pitting edema in symptomatic leg only (non-varicose)	1
Previously documented DVT	1
Alternative diagnosis as likely or greater	-2
DVT Risk Score	

**DVT LOW RISK SCORE <2
DVT HIGH RISK SCORE ≥2**

Pulmonary Embolism (PE)	Score
Signs or symptoms of DVT (objectively measured leg swelling, pain with palpation)	3
HR greater than 100 beats/minute	1.5
Immobilization (for 3 or more days) or recent surgery within 4 weeks	1.5
Previous DVT or PE	1.5
Hemoptysis	1
Malignancy (palliative, ongoing treatment or within last 6 months)	1
PE as or more likely than alternate diagnosis	3
PE Risk Score	

**PE RISK SCORE: LOW <2.0;
PE RISK SCORE: MODERATE 2.0 – 6.0;
PE RISK SCORE: HIGH >6.0**