

Date: December 17, 2013

To: Central Zone – Specific Former David Thompson Health Region Sites
Physicians, Nurse Managers, Educators and Practitioners, Laboratory Staff

From: AHS Laboratory Services

Re: Quantitative D-Dimer Testing

PLEASE POST OR DISTRIBUTE AS WIDELY AS APPROPRIATE

Key Messages:

- Effective **December 18, 2013**, quantitative D-Dimer testing will be available in your local laboratory. This will replace the current qualitative D-Dimer testing on site.
- The following laboratory sites will have quantitative D-Dimer testing available:

Laboratory Site		
Castor - Our Lady of the Rosary Hospital	Innisfail Health Centre	Rocky Mountain House Health Centre
Coronation Hospital and Care Centre	Lacombe Health Care Centre	Stettler Hospital and Care Centre
Drayton Valley Hospital and Care Centre	Olds Hospital and Care Centre	Sundre Hospital and Care Centre
Drumheller Health Centre	Ponoka Hospital and Care Centre	Three Hills Health Centre
Hanna Health Centre	Rimbey Hospital and Care Centre	Wetaskiwin Hospital and Care Centre

Why this is important:

- Quantitative D-Dimer is significantly more sensitive than the qualitative test.
- D-Dimer has a high negative predicative value, but only for patients at low risk for venous thromboembolism. D-Dimer is not indicated for high risk patients. See the attached D-Dimer Pretest Probability Assessment tool (extra copies available from your local Lab).

Result Reporting:

- All quantitative D-Dimer results will have the following comment appended:

“A D-Dimer level BELOW the 0.5 mg/L cutoff may be used with the standardized clinical assessment and/or imaging studies to help exclude venous thromboembolism (VTE). Values above the cutoff are not diagnostically useful in VTE assessment.”

Inquiries and feedback may be directed to:

- Dr. Tony Morris, Pathologist, Central Zone at: 403-343-4515 or email: tony.morris@albertahealthservices.ca

This bulletin has been reviewed and approved by:

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

D-Dimer Pretest Probability Assessment

Assess the patient clinically and assign indicated points if the condition is present.

DEEP VEIN THROMBOSIS (DVT)

NOTE: If both legs are affected, score the more severely affected side.

- | | POINTS (CIRCLE) |
|------------------------------------------------------------------------------------------|-----------------|
| 1. Active cancer (treatment ongoing or within previous 6 months or palliative). | 1 |
| 2. Paralysis, paresis, or recent plaster immobilization of the lower extremity. | 1 |
| 3. Recently bedridden for ≥ 3 days or major surgery within 12 weeks. | 1 |
| 4. Localized tenderness along the distribution of the deep venous system. | 1 |
| 5. Entire leg swollen. | 1 |
| 6. Calf swelling > 3 cm vs the other leg (measured 10 cm below tibial tuberosity)..... | 1 |
| 7. Pitting edema (in symptomatic leg). | 1 |
| 8. Collateral superficial veins (non-varicose). | 1 |
| 9. Previously documented DVT | 1 |
| 10. Alternative diagnosis at least as likely as DVT. | -2 |
| (e.g. trauma, cellulitis). | |

DVT RISK SCORE _____

<u>DVT RISK SCORE</u>	<u>DVT RISK CATEGORY</u>	<u>TEST ORDER</u>	
< 2	→ DVT - LO	→ D-DIMER	↗ Negative (< 0.5 mg/L) – Stop ↘ Positive (≥ 0.5 mg/L) – Proceed to DI
≥ 2	→ DVT - HI	→ DIAGNOSTIC IMAGING (DI)	

PULMONARY EMBOLISM (PE)

- | | POINTS (CIRCLE) |
|----------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. Clinical signs and symptoms of DVT (minimum - presence of leg swelling and pain with palpation of the deep veins). | 3 |
| 2. An alternative diagnosis is less likely than PE. | 3 |
| 3. Heart rate > 100 beats/minute. | 1.5 |
| 4. Immobilization or surgery in the previous 4 weeks. | 1.5 |
| 5. Previous DVT/PE. | 1.5 |
| 6. Hemoptysis. | 1 |
| 7. Malignancy (on Rx, Rx in last 6 months or palliative). | 1 |

PE RISK SCORE _____

<u>PE RISK SCORE</u>	<u>PE RISK CATEGORY</u>	<u>TEST ORDER</u>	
< 2	→ PE - LO	→ D-DIMER	↗ Negative (< 0.5 mg/L) – Stop ↘ Positive (≥ 0.5 mg/L) – Proceed to DI
≥ 2	→ PE - HI	→ DIAGNOSTIC IMAGING (DI)	

****NOTE:** D-Dimer testing has significant negative probability only in those patients with pretest probability that is low risk and is not indicated in patients with high risk scores.