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To: UMHS Physicians, Nurse Practitioners, and Physician Assistants

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Subject: **UMHS Clinical Care Guideline Update: Venous Thromboembolism [2014 update]**

What's New!

Treatment

- Initiate both heparin and warfarin anticoagulation. Initiate heparin immediately upon diagnosis. (Low molecular weight heparin is preferred over UFH for both PE and DVT.) Warfarin should also be started on day 1 of treatment simultaneous to heparin initiation (no longer delay for heparin loading).
- Outpatient management. Patients who are clinically stable and not at elevated risk due to comorbidities can be managed entirely as outpatients.
- If heparin contraindicated. Patients who are not candidates for heparin anticoagulation due to risk of major bleeding or to drug sensitivity may be candidates for one of the new non-heparin anticoagulant agents (e.g., argatroban). Those who cannot use any anticoagulant should have an inferior vena cava filter placed.
- Rivaroxaban. Rivaroxaban is FDA approved for VTE prophylaxis and treatment. It can be initiated as oral monotherapy in place of heparin/warfarin. It does not have the drug and diet limitations of warfarin, as it has little hepatic metabolism, and is not affected by vitamin K intake, but it is far more expensive.

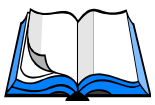
Key aspects

Deep venous thrombosis, along with pulmonary embolism, is one of the most frequent causes of hospitalization for adults, often complicates surgery and childbirth, carries significant risk of death and of long-term sequelae, and is one of the most challenging and often subtle diagnoses in clinical practice. Improved therapy (LMWH) and diagnostic modalities (duplex Doppler ultrasound for DVT, formal risk scores and D-dimer testing) are available.

Diagnosis

- DVT. Formal clinical likelihood estimation is necessary and should precede imaging with a single duplex color Doppler venous ultrasound scan.
- PE. Formal clinical likelihood estimation is necessary, and should precede imaging by CT scanning.
- Alternate for diagnosis exclusion. Patients with low prior probability on clinical likelihood estimation (Wells criteria scoring) can have high-sensitivity D-dimer testing to exclude DVT or PE without imaging. D-dimer testing is not indicated for patients at moderate or high prior probability.
- Pregnancy. Suspicion of PE during pregnancy presents diagnostic challenges due to radiation exposure to the fetus and altered reliability of the D-dimer test. These VTE guidelines incorporate 2011 Clinical Practice Guidelines of the American Thoracic Society and Society of Thoracic Radiology (Leung AN, Bull TM, Jaeschke R, et al).

Patient education material.



Tips to Prevent Blood Clots: After Your Visit
Learning About Deep Vein Thrombosis
Deep Vein Thrombosis: After Your Visit
Deep Vein Thrombosis: After Your Visit to the Emergency Room
Pulmonary Embolism: After Your Visit
Anticoagulants: After Your Visit
Superficial Thrombophlebitis: After Your Visit

Inpatient VTE Assessment Tool

Use the VTE risk assessment tool in the electronic health record (EHR) to document VTE risk in all adult inpatients (ECCA requirement effective 10/22/08). A reminder alert will be visible to the ordering clinician if a VTE assessment has not been completed in the EHR within 23 hours of admission.