



The Clinical Case for VTE Prophylaxis

Preventing Blood Clots* in Hospitalized Patients



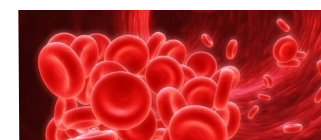
Every hospitalized patient is considered at risk for developing blood clots, which are **THE MOST COMMON PREVENTABLE CAUSE OF DEATH** among hospitalized patients.

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Post-thrombotic syndrome, a complication that occurs in 40%–80% of patients who develop blood clots, may result in permanent disability.

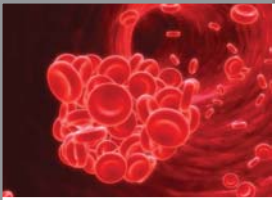
* **Definitions of Deep Vein Thrombosis (DVT), Pulmonary Embolism (PE), and Venous Thromboembolism (VTE):** DVT refers to the formation of one or more blood clots in one of the body's large veins, most commonly in the lower limbs (e.g., lower leg or calf). The most serious complication that can arise from DVT is a PE, which occurs when a portion of the blood clot breaks loose and travels in the bloodstream—first to the heart and then to the lungs, where it can partially or completely block a pulmonary artery or one of its branches. DVT and PE are collectively referred to as VTE.



Health Services Advisory Group, Inc.

Translating VTE Guidelines Into Practice

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Translating VTE Guidelines Into Practice

Background

- Up to 2 million Americans a year suffer from venous thromboembolism (VTE, which includes deep-vein thrombosis [DVT] and pulmonary embolism [PE]).¹
- Almost 300,000 die from PE, most resulting from DVT.²
- 93% of VTE-related deaths are due to sudden, fatal PE (34%) or follow undetected PE (59%).³
- Complications from VTE kill more Americans than AIDS and breast cancer combined.⁴
- **DVT-related PE is the most common cause of preventable hospital death.**⁵
 - ~50% of all VTE occurring in the community is related to a previous hospitalization.⁶
 - Without prophylaxis, hospital-acquired VTE occurs in approximately 10% to 40% of at-risk patients.⁷
 - In one study, 75% of patients admitted to a hospital's medical services were characterized as at increased risk for VTE.⁸
- Appropriate VTE prophylaxis in patients at risk is No. 1 in AHRQ's Top 11 Safety Practices, according to strength of evidence.

Process

Attach This Hospital's VTE Risk-Assessment Process Here.

Disease

According to the National Heart, Lung, and Blood Institute⁹:

- Deep vein thrombosis (DVT) is a blood clot that forms in a vein deep in the body. Blood clots occur when blood thickens and clumps together.
- A blood clot in a deep vein can break off and travel through the bloodstream. The loose clot is called an embolus. When the clot travels to the lungs and blocks blood flow, the condition is called pulmonary embolism (PE), which can damage the lungs and other organs in the body and cause death.
- Blood clots in the thigh are more likely to break off and cause PE than blood clots in the lower leg or other parts of the body.
- **DVTs are often asymptomatic.** Symptoms that may present include leg pain, "Charlie Horse," unilateral leg swelling, and/or prominence of veins in the affected leg.

Prophylaxis

There is a disconnect between evidence and execution as it relates to VTE prevention.

Every patient admitted to the hospital should be considered to be at risk for VTE, and preventive measures should be considered the standard of care.

Rationale for thromboprophylaxis:

- **High prevalence of VTE**
 - Most hospitalized patients have risk factors for VTE.
 - VTE is common in many hospitalized patient groups.
 - Hospital-acquired VTEs are usually clinically silent.
 - It is difficult to predict which at-risk patients will develop symptomatic thromboembolic complications.
- **Adverse consequences of unprevented VTE**
 - Symptomatic DVT and PE; Fatal PE
 - Costs of investigating symptomatic patients
 - Risks and costs of treating unprevented VTE, especially bleeding
 - Increased future risk of recurrent VTE
 - Chronic post-thrombotic syndrome
- **Effectiveness of thromboprophylaxis**
 - Thromboprophylaxis is highly efficacious at preventing DVT, proximal DVT, symptomatic VTE, and fatal PE.

Complications

DVT reoccurs in ~30% of patients within 8 years following the discontinuation of anticoagulant therapy. Post-thrombotic syndrome (PTS) occurs in 40%–80% of patients with DVT.

- PTS refers to a constellation of symptoms that may include swelling, skin discoloration, ulceration, varicose veins, and pain.
- PTS may result in a permanent disability.
- Up to 15 million Americans are afflicted.
- 4% of the U.S. population has or will develop a venous leg ulcer.
- PTS patients may be at increased risk for recurrent VTE.
- PTS is preventable if thrombosis prophylaxis is routinely employed.

Other complications of DVT include chronic pulmonary hypertension (2%) and pulmonary embolism (symptomatic = 25%, **asymptomatic up to 70%**, death from PE = 5%–10%).

Discharge

When discharging and transitioning care, consider the following¹²:

- If the patient is going home with a VTE prophylaxis program, it is important that a doctor-to-doctor conversation take place so that the physician or home health service that will follow the patient in the community is aware of the diagnosis and the plan.
 - Telephone conversations should be followed up by sending the discharge information to the provider's office. This should include evidence-based guidelines or institutional protocols to ensure that best practices are being followed.
 - The discharge plan should include—and the patient should be informed of—specifics about where blood work should be done, where the lab is, and whether results should be faxed or called in.
- **Prior to discharge, patients should be educated and provided with written information regarding medications and red-flag events—including those side effects and symptoms for which patients should call their physician.**

Risk Factors

A large proportion of hospitalized patients are at risk for VTE, but there is a low rate of appropriate prophylaxis.¹⁰

- **Previous venous thromboembolism**
 - Patients with prior DVT are five times more likely to develop a subsequent DVT.
- **Increased age**
 - The rate of DVT and PE may be twice as common in patients between the ages of 50 and 81.
- **Surgery, Leg Fractures**
 - Clot fragments are found in 60% of all patients with leg fractures.
- **Immobilization—bedrest, stroke, paralysis**
 - Without prophylaxis, one-half of all patients develop acute DVT within 5 days following a stroke.
- **Malignancy and its Rx (CTx, RTx, hormonal)**
 - In 38% of concomitant cancer and DVT, the DVT is detected first.
- **Heart or respiratory failure**
- **Estrogen use, pregnancy, postpartum**
 - Pregnant women are five times more likely to develop DVT.
- **Central venous lines**
- **Thrombophilic abnormalities/predispositions**

Resources

- **Translating VTE Guidelines Into Practice:** www.hsag.com/vte
- **American College of Chest Physicians:** www.chestnet.org
- **American Medical Directors Association—DVT Clinical Corners:** www.amda.com/tools/clinical/dvt.cfm
- **American Venous Forum:** www.venous-info.com
- **Case Management Adherence Guidelines for VTE:** www.cmsa.org/portals/0/pdf/CMAG_DVT.pdf
- **Coalition to Prevent DVT:** www.preventDVT.org
- **Society of Hospital Medicine—VTE Prevention Collaborative:** www.hospitalmedicine.org
- **Vascular Disease Foundation:** www.vdf.org
- **Venous Resource Center:** www.venousdisease.com

Risk Assessment

DVT and PE are often undetected until it is too late. **Approximately 80% of DVT cases are clinically silent.**

DVT Free: The largest epidemiological study of DVT (proven by ultrasound, Oct. 2001 to March 2002). 5,451 patients with a confirmed DVT at 183 study sites in the USA.¹¹

- Less than 30% of patients received prophylaxis within 30 days prior to a diagnosis of DVT.
- Of 2,727 patients who were hospitalized when DVT was diagnosed, 42% failed to receive prophylaxis within 30 days of diagnosis.
- 71% (N = 3,894) of all patients, including 2,295 non-surgical patients, received no prophylaxis within 30 days prior to diagnosis of DVT.
- Nonsurgical patients are less likely to receive prophylaxis than surgical patients.
- **Approximately 75% of fatal PEs that are diagnosed at autopsy are in medical patients.**

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