

VTE Prophylaxis for Surgical Patients: Evidence, Policy, and Process

Performance Measures

SCIP-VTE-1: Surgery Patients with Recommended Venous Thromboembolism Prophylaxis Ordered

Rationale:

- There are over 30 million surgeries performed in the United States each year.
- Despite the evidence that VTE is one of the most common postoperative complications and prophylaxis is the most effective strategy to reduce morbidity and mortality, it is often underused.
- The frequency of venous thromboembolism (VTE)—which includes deep vein thrombosis (DVT) and pulmonary embolism (PE)—is related to the type and duration of surgery, patient risk factors, duration and extent of postoperative immobilization, and use or nonuse of prophylaxis.
- According to Heit et al. ([Arch Intern Med. 2000;160:809-815](#)), surgery was associated with over a twenty-fold increase in the odds of being diagnosed with VTE.
- Studies have shown that appropriately used thromboprophylaxis has a positive risk/benefit ratio and is cost effective.
- Prophylaxis recommendations for this measure are based on selected surgical procedures from the 2004 American College of Chest Physicians guidelines. (The guidelines were updated in 2008, and are referenced in the Evidence section, below.)

SCIP-VTE-2: Surgery Patients Who Received Appropriate Venous Thromboembolism Prophylaxis Within 24 Hours Prior to Surgery to 24 Hours After Surgery

Rationale:

- Timing of prophylaxis is based on the type of procedure, prophylaxis selection, and clinical judgment regarding the impact of patient risk factors.
- The optimal start of pharmacologic prophylaxis in surgical patients varies and must be balanced with the efficacy-versus-bleeding potential.
- Due to the inherent variability related to the initiation of prophylaxis for surgical procedures, 24 hours prior to surgery to 24 hours post surgery was recommended by consensus of the SCIP Technical Expert Panel in order to establish a timeframe that would encompass most procedures.

From: [Specifications Manual for National Hospital Quality Measures](#)

Evidence

- MedScape: Key Articles and Guidelines for the Prevention of Venous Thromboembolism (will require that you log in [free]): <http://www.medscape.com/viewarticle/590272?src=mp&spon=2&uac=42416EX>
- Antithrombotic and Thrombolytic Therapy, 8th Edition: ACCP Guidelines, *Chest*, 133; 6:1–66, 2008. http://chestjournal.chestpubs.org/content/133/6_suppl
- American Academy of Orthopaedic Surgeons Clinical Guideline on Prevention of Symptomatic Pulmonary Embolism in Patients Undergoing Total Hip or Knee Arthroplasty http://www.aaos.org/research/guidelines/PE_summary.pdf

- Evidence Report/Technology Assessment Number 68 Diagnosis and Treatment of Deep Venous Thrombosis and Pulmonary Embolism Prepared for the Agency for Healthcare Research and Quality (AHRQ)<http://www.ahrq.gov/downloads/pub/evidence/pdf/dvt/dvt.pdf>
- National Quality Forum; National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Policy, Preferred Practices, and Initial Performance Measures Executive Summary http://www.qualityforum.org/Publications/2006/12/National_Voluntary_Consensus_Standards_for_Prevention_and_Care_of_Venous_Thromboembolism_Policy,_Preferred_Practices,_and_Initial_Performance_Measures.aspx
- Prevention of Pulmonary Embolism in General Surgery Patients: Urszula Zurawska, Sudha Parasuraman and Samuel Z. Goldhaber DOI10.1161/CIRCULATIONAHA.106.674663, *Circulation*; 115:e302–e307, 2007. <http://circ.ahajournals.org/cgi/reprint/115/9/e302>

Policy

The Society of Hospital Medicine recommends that the organization have an enforced policy mandating the use of a VTE protocol with hard stops in place at key transition points when orders/documentation do not support VTE prophylaxis. Page 41 of the *VTE QI Implementation Guide* provides considerations for developing a VTE protocol:

<http://www.hospitalmedicine.org/AM/Template.cfm?Section=Home&Template=/CM/ContentDisplay.cfm&ContentID=17773>

Purpose: All surgical inpatients should be assessed for their risk of DVT/PE related to their surgical procedure and have appropriate prophylaxis ordered.

Policy: Evidence-based preprinted orders should be placed on the chart for every surgical inpatient. The order sheet should be completed by the surgeon prior to the patient leaving the post-anesthesia care unit. Page 57 of the *VTE QI Implementation Guide* provides a sample order set:

<http://www.hospitalmedicine.org/AM/Template.cfm?Section=Home&Template=/CM/ContentDisplay.cfm&ContentID=17773>

Exclusions: Patients at risk for bleeding or actively bleeding may be excluded from pharmacological prophylaxis; however, there should be physician documentation of this risk and mechanical prophylaxis should be used. Reasons for not administering pharmacological prophylaxis can include active bleeding (gastrointestinal bleeding, cerebral hemorrhage, retroperitoneal bleeding), bleeding risk, hemorrhage, patients on continuous IV heparin therapy within 24 hours before or after surgery, thrombocytopenia, and patient refusal.

Documented reasons for not administering mechanical prophylaxis can include patients with bilateral amputee, bilateral lower extremity trauma, patient refusal, and patient on continuous IV heparin therapy within 24 hours before or after surgery.

These exclusions may not be all inclusive: refer to the current *Specifications Manual* for complete instructions and documentation requirements for exclusions of VTE prophylaxis to meet the Surgical Care Improvement Project (SCIP) VTE measures.



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Process

- Procedure

Evidence-based preprinted order sets should be placed on the chart for the surgeon to complete prior to the patient leaving the post-anesthesia care unit.

- Documentation

If the preprinted order set is not used by the surgeon, physician documentation should include a reason for not prescribing mechanical and/or pharmacological prophylaxis.

Nursing documentation should include standard documentation for medication administration for pharmacological prophylaxis. Mechanical prophylaxis documentation should include the application of devices.

Additional Resources

- HSAG's Translating VTE Guidelines into Practice [VTE Resource Kit](#)
- AHRQ: [Making Health Care Safer: A Critical Analysis of Patient Safety Practices](#)
- AHRQ: [Preventing Hospital-Acquired Venous Thromboembolism: A Guide for Effective Quality Improvement](#)
- The Surgeon General's [Call to Action to Prevent Deep Vein Thrombosis and Pulmonary Embolism](#)
- Premier: [Venous Thromboembolism](#)
- Society of Hospital Medicine: [VTE Resource Room](#) (includes sample [VTE protocols and order sets](#))
- Society of Hospital Medicine: [VTE Prevention Collaborative](#)
- [The Coalition to Prevent Deep-Vein Thrombosis](#)
- ClotCare [Online Resources](#)
- American Society on Aging: [Deep-vein-thrombosis Module](#)
- Joseph A. Caprini, MD, MS, FACS, RVT: [Venous Resource Center](#)

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