



## Venous Thromboembolism Prevention



 **Surgical Care Improvement Project**  
A National Quality Partnership

Howard Pitluk, MD, MPH, FACS  
VP/Chief Medical Officer  
Health Services Advisory Group  
SCIP Collaborative  
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**Why focus on surgical quality?**



~30 million major operations/year in the U.S.  
Despite advances in surgical and anesthesia technique and improvements in perioperative care, variations in outcomes for patients having surgery are well known.

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**Why focus on surgical quality?**

Among the most common complications

- Surgical site infections (SSIs)
- Cardiovascular complications
- Respiratory complications
- **Thromboembolic complications**



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**Cost of Complications**

**Attributable costs**

- Infectious complications— \$1,398
- Respiratory complications— \$5,246
- Cardiovascular complications— \$7,789
- **Thromboembolic complications— \$18,310**

Dimick JB, et al. *J Am Coll Surg*, 2004, Oct;199(4):531-7



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**Surgical Care Improvement Project  
National Goal**

Reduce preventable surgical morbidity and mortality by 25% by 2010

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**Venous Thromboembolism  
Prevention**

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# Venous Thromboembolism Prevention

**Venous Thromboembolism Prevention**

VTE Remains a major health problem

- 200,000 new cases annually in United States
- In addition to the risk of sudden death,
  - 30% of survivors develop recurrent VTE w/in 10 yrs.
  - 28% of survivors develop venous stasis syndrome w/in 20 yrs.
- The incidence of VTE is more than 100 times greater for patients who have been hospitalized than the general population.
- Incidence increases with age.

Heit JA. *Clin Geriatr Med.* 2001;17:71-92.  
 Heit JA, et al. *Mayo Clin Proc.* 2001;76:1102-1110.  
 Geerts WH, et al. *Chest.* 2001;119:132S-175S

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**Venous Thromboembolism Prevention**

The frequency of VTE, which includes deep vein thrombosis and pulmonary embolism, is related to the type and duration of surgery, patient risk factors, duration and extent of postoperative immobilization, and use or nonuse of prophylaxis.

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**Venous Thromboembolism Prevention**

The rationale for thromboprophylaxis is based on the high prevalence of VTE among hospitalized patients; the clinically silent nature of the disease in the majority of patients; and the morbidity, costs, and potential mortality associated with unprevented thrombi.

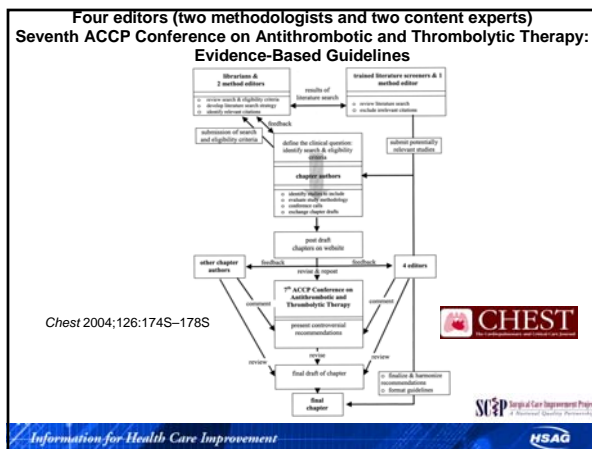
Geerts WH, et al. *Chest* 2004;126:338S-400S  
 American College of Chest Physicians

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**SCIP Steering Committee (partial list)**

- American College of Surgeons
- American Hospital Association
- American Society of Anesthesiologists
- American Academy of Orthopedic Surgeons
- Association of peri-Operative Registered Nurses
- Agency for Healthcare Research and Quality
- Centers for Medicare & Medicaid Services
- Centers for Disease Control and Prevention
- Department of Veteran's Affairs
- Institute for Healthcare Improvement
- The Joint Commission

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**Measure Set: Surgical Care Improvement Project (SCIP)**

- **Set Measure ID#:** SCIP-VTE-1
- **Performance Measure Name:** Surgery patients with recommended venous thromboembolism (VTE) prophylaxis ordered during the admission.

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## Venous Thromboembolism Prevention

### Measure Set: Surgical Care Improvement Project (SCIP)

- **Set Measure ID#:** SCIP-VTE-2
- **Performance Measure Name:** Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to *Surgical Incision Time* to 24 hours after *Surgery End Time*.

SCIP Surgical Care Improvement Project  
National Quality Forum

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### Measure Set: Surgical Care Improvement Project (SCIP)

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.

SCIP Surgical Care Improvement Project  
National Quality Forum

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### VTE Prophylaxis

#### Grade 1 Recommendations

Surgery*	Recommended Prophylaxis
<i>General surgery</i>	Any of the following: Low-dose unfractionated heparin (LDUH) 5000 units bid or tid Low molecular weight heparin (LMWH) LDUH or LMWH combined with IPC or GCS
<i>General surgery with high risk for bleeding (based on physician-documentation of bleeding risk)</i>	Any of the following: Graduated Compression stockings (GCS) Intermittent pneumatic compression (IPC)
<i>Gynecologic surgery</i>	Any of the following: Low-dose unfractionated heparin (LDUH) 5000 units bid or tid Low molecular weight heparin (LMWH) Intermittent pneumatic compression devices (IPC) LDUH or LMWH combined with IPC or GCS

\*Open surgical procedure > 30 minutes requiring in-hospital stay > 24 hours postoperative.

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### VTE Prophylaxis

#### Grade 1 Recommendations

Surgery*	Recommended Prophylaxis
<i>Urologic surgery</i>	Any of the following: Low-dose unfractionated heparin (LDUH) 5000 units bid or tid Low molecular weight heparin (LMWH) Intermittent pneumatic compression devices (IPC) Graduated compression stockings (GCS) LDUH or LMWH combined with IPC or GCS
<i>Elective total hip replacement</i>	Any of the following started within 24 hours of surgery: Low molecular weight heparin (LMWH) Fondaparinux 2.5 mg Adjusted-dose warfarin (INR target 2.5, range 2.0-3.0)
<i>Elective total knee replacement</i>	Any of the following: Low molecular weight heparin (LMWH) Fondaparinux 2.5 mg Adjusted-dose warfarin (INR target 2.5, range 2.0-3.0) Intermittent pneumatic compression devices (IPC)

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### VTE Prophylaxis

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### VTE Prophylaxis

#### Grade 1 Recommendations

Surgery*	Recommended Prophylaxis
<i>Urologic surgery</i>	Any of the following: Low-dose unfractionated heparin (LDUH) 5000 units bid or tid Low molecular weight heparin (LMWH) Intermittent pneumatic compression devices (IPC) Graduated compression stockings (GCS) LDUH or LMWH combined with IPC or GCS
<i>Elective total hip replacement</i>	Any of the following started within 24 hours of surgery: Low molecular weight heparin (LMWH) Fondaparinux 2.5 mg Adjusted-dose warfarin (INR target 2.5, range 2.0-3.0)
<i>Elective total knee replacement</i>	Any of the following: Low molecular weight heparin (LMWH) Fondaparinux 2.5 mg Adjusted-dose warfarin (INR target 2.5, range 2.0-3.0) Intermittent pneumatic compression devices (IPC)

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## Venous Thromboembolism Prevention

**VTE Prophylaxis**  
Grade 1 Recommendations

Surgery*	Recommended Prophylaxis
Intracranial neurosurgery	Any of the following: IPC with or without GCS Low-dose unfractionated heparin (LDUH) Postoperative Low molecular weight heparin (LMWH) LDUH or LMWH combined with IPC or GCS

Information for Health Care Improvement | 60 minutes | Requiring in-hospital stay > 24 hours postoperative. NSAG



**Contact Information**

Howard Pitluk, MD, MPH, FACS  
V.P./Chief Medical Officer  
Health Services Advisory Group  
[hpitluk@hsag.com](mailto:hpitluk@hsag.com)  
602.665.6143

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*Over 1 million drug-related injuries occur every year in health care settings. The Institute of Medicine estimates that at least a quarter of these injuries are preventable.*

**To find out how to prevent medication errors, go to**  
<http://www.hsag.com/drugsafety/>.

**www.hsag.com**

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