**NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE**

Measure Information Form

Measure Set: Surgical Care Improvement Project (SCIP)

Set Measure ID#: SCIP-VTE-1

Performance Measure Name: Surgery Patients with Recommended Venous Thromboembolism Prophylaxis Ordered.

Description: Surgery patients with recommended venous thromboembolism (VTE) prophylaxis ordered anytime from hospital arrival to 48 hours after Surgery End Time.

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), that 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. According to Heit et al, 2000, 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.

Type of Measure: Process

Improvement Noted As: An increase in the rate.

Numerator Statement: Surgery patients with recommended venous thromboembolism (VTE) prophylaxis ordered anytime from hospital arrival to 48 hours after Surgery End Time.

Included Populations: Not applicable

Excluded Populations: None

Data Elements:
- Documented Bleeding Risk
- Neuraxial Anesthesia
- VTE Prophylaxis
Denominator Statement: All selected surgery patients.

Included Populations:
- **ICD-9-CM Principal Procedure Code** of selected surgeries (refer to Appendix A, Table 5.10 for ICD-9-CM codes).
  AND
- **ICD-9-CM Principal Procedure Code** of selected surgeries (refer to Appendix A, Table 5.17-5.24 for ICD-9-CM codes).

Excluded Populations:
- Patients who are less than 18 years of age.
- Patients with procedures performed entirely by laparoscope.
- Patients whose total surgery time is less than or equal to 30 minutes.
- Patients who stayed less than or equal to 24 hours postop.
- Burn patients (refer to Appendix A, Table 5.14 for ICD-9-CM codes).
- Patients who are on warfarin prior to admission.
- Patients with contraindications to both mechanical and pharmacological prophylaxis.
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission.

- **Patients involved in clinical trials.**

Data Elements:
- **Admission Date**
- **Birthdate**
- **Clinical Trial**
- **Contraindication to VTE Prophylaxis**
- **Discharge Date**
- **Discharge Time**
- **ICD-9-CM Principal Diagnosis Code**
- **ICD-9-CM Principal Procedure Code**
- **Laparoscope**
- **Preadmission Warfarin**
- **Surgery End Date**
- **Surgery End Time**
- **Surgery Start Date**
- **Surgical Incision Time**

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.
Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: Measure rates for SCIP-VTE-1 should be analyzed in order to identify where quality improvement efforts should be focused. In the course of these efforts, hospitals may find it useful to drill down by types of surgery to the responses for the data element VTE Prophylaxis. The analysis would identify surgical patients who had prophylaxis ordered which was not the recommended prophylaxis.

Sampling: Yes, for additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:
- Goldhaber SZ, Dunn K, MacDougall RC. New onset of venous thromboembolism among hospitalized patients at Brigham and Women's Hospital is caused more often by prophylaxis failure than by withholding treatment. Chest. 2000;118:1680-1684. PMID: 11115458.


<table>
<thead>
<tr>
<th>Surgery Type</th>
<th>Recommended Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Intracranial Neurosurgery Appendix A, Table 5.17</td>
<td>Any of the following: Intermittent pneumatic compression devices (IPC) with or without graduated compression stockings (GCS). Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH).† LDUH or LMWH† combined with IPC or GCS. † Current guidelines recommend postoperative low molecular weight heparin for Intracranial Neurosurgery.</td>
</tr>
<tr>
<td>□ Elective Spinal Surgery Appendix A, Table 5.18</td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Intermittent pneumatic compression devices (IPC). Graduated compression stockings (GCS). IPC combined with GCS. LDUH or LMWH combined with IPC or GCS.</td>
</tr>
<tr>
<td>□ General Surgery Appendix A, Table 5.19</td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Factor Xa Inhibitor (Fondaparinux) LDUH or LMWH combined with IPC or GCS.</td>
</tr>
<tr>
<td>□ General Surgery with high risk for bleeding* Appendix A, Table 5.19</td>
<td>Any of the following: Graduated Compression stockings (GCS). Intermittent pneumatic compression (IPC).</td>
</tr>
<tr>
<td>□ Gynecologic Surgery Appendix A, Table 5.20</td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Intermittent pneumatic compression devices (IPC). LDUH or LMWH combined with IPC or GCS.</td>
</tr>
<tr>
<td>□ Urologic Surgery Appendix A, Table 5.21</td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Intermittent pneumatic compression devices (IPC). Graduated compression stockings (GCS). LDUH or LMWH combined with IPC or GCS.</td>
</tr>
<tr>
<td>□ Elective Total Hip Replacement * Appendix A, Table 5.22</td>
<td>Any of the following started within 24 hours of surgery: Low molecular weight heparin (LMWH). Factor Xa Inhibitor (Fondaparinux) Warfarin.</td>
</tr>
</tbody>
</table>

*Patients who receive neuraxial anesthesia or have a documented bleeding risk may pass the performance measure if appropriate pharmacologic or mechanical prophylaxis is ordered.
### VTE Prophylaxis Selection for Surgery (Cont.)

<table>
<thead>
<tr>
<th>Surgery Type</th>
<th>Recommended Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elective Total Knee Replacement</strong> Appendix A, Table 5.23</td>
<td>Any of the following: Low molecular weight heparin (LMWH). Factor Xa Inhibitor (Fondaparinux). Warfarin. Intermittent pneumatic compression devices (IPC).</td>
</tr>
<tr>
<td><strong>Hip Fracture Surgery Appendix A, Table 5.24</strong></td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Factor Xa Inhibitor (Fondaparinux) Warfarin.</td>
</tr>
<tr>
<td><strong>Elective Total Hip Replacement with high risk for bleeding</strong> Appendix A, Table 5.22</td>
<td>Any of the following: Graduated Compression stockings (GCS). Intermittent pneumatic compression (IPC).</td>
</tr>
<tr>
<td><strong>Hip Fracture Surgery with high risk for bleeding</strong> Appendix A, Table 5.24</td>
<td>Any of the following: Low-dose unfractionated heparin (LDUH). Low molecular weight heparin (LMWH). Factor Xa Inhibitor (Fondaparinux) Warfarin.</td>
</tr>
</tbody>
</table>

*Patients who receive neuraxial anesthesia or have documented bleeding risk may pass the performance measure if appropriate pharmacologic or mechanical prophylaxis is ordered.*
SCIP-VTE-1: Surgery patients with Recommended Venous Thromboembolism Prophylaxis Ordered

Numerator: Surgery patients with recommended venous thromboembolism (VTE) prophylaxis ordered anytime from hospital arrival to 48 hours after Surgery End Time

Denominator: All selected surgery patients.

Variable Key:
- Surgery Length
- Postop Stay
- Surgery Days

ICD-9-CM Principal Diagnosis Code
- Not on Table 5.14
- On Tables 5.17 through 5.24

ICD-9-CM Principal Procedure Code
- Not on Table 5.14
- On Tables 5.17 through 5.24

Laparoscope
- = 2
- Missing

Clinical Trial
- = Y
- Missing
- = N

Start

Run cases that are included in the SCIP ICD Population and pass the edits defined in the Data Processing Flow through this measure.

VTE-1 X
- Missing

VTE-1
- B
- = 1, 3
- = 2
Surgery Length = Surgery End Date and Surgery End Time – Surgery Start Date and Surgical Incision Time (in minutes)

Surgery Days (in days) = Surgery Start Date – Admission Date

Postop Stay = Discharge Date and Discharge Time – Surgery End Date and Surgery End Time (in minutes)
Note: If VTE Prophylaxis field is populated with an allowable value and the corresponding VTE Timely field is Missing, the entire case will be rejected by the front end edits.
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