A New Core Measure:
Venous Thromboembolism (VTE)

January 1, 2013
Objectives

• Describe Inova’s plan to comply with the VTE core measures

• Assess a patient’s need for VTE prevention therapy

• Recommend appropriate pharmacologic therapy for prevention of VTE

• Discuss discharge plans with patients diagnosed with VTE events
What are Core Measures?

• Core Measures are derived from a set of quality indicators defined by the Centers for Medicare and Medicaid Services (CMS).

• Shown to reduce the risk of complications, prevent recurrences and otherwise treat the majority of patients who come to a hospital for treatment of a condition or illness.
Why Core Measures for VTE?

• VTE is the most common cause of preventable hospital death

• Pharmacologic prevention measures are safe, effective, cost-effective and validated by national guidelines

• Majority of hospital acquired VTEs develop in patients with at least two or more risk factors
VTE Core Measures

- VTE-1 – VTE prophylaxis on admission or by Hospital day 1
- VTE-2 – Intensive Care Unit VTE Prophylaxis day of admission or by first day
- VTE-3 – VTE patients with anticoagulation overlap therapy
- VTE-4 – Patients receiving unfractionated heparin (UFH) with dosages/platelet count monitoring by protocol or nomogram
- VTE-5 – VTE discharge instructions for patients of Warfarin/Coumadin only
- VTE-6 – Incidence of potentially preventable VTE.
Goals of the VTE Measures

• Reduce number of VTE events

• Achieve compliance with:
  – Assessment, prophylaxis, treatment, monitoring, and discharge instructions

• Promote multidisciplinary collaboration
• Complete VTE risk assessment documentation on ALL patients at admission
  – Assessments based on Caprini and Padua Risk Assessment Models
  – Evidence based risk assessment models recommended by 2012 Chest Guidelines
### Padua Risk Factors for VTE

<table>
<thead>
<tr>
<th>Highest Risk Factors (3 points each)</th>
<th>High Risk Factors (2 points each)</th>
<th>Moderate Risk Factors (1 point each)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Cancer¹</td>
<td>Recent (≤ 1 month) trauma/surgery</td>
<td>Elderly age (70 years old)</td>
</tr>
<tr>
<td>Previous VTE</td>
<td></td>
<td>Heart and/or respiratory failure</td>
</tr>
<tr>
<td>Reduced mobility²</td>
<td></td>
<td>AMI or Ischemic Stroke</td>
</tr>
<tr>
<td>Known thrombophilic condition³</td>
<td></td>
<td>Acute infection and/or rheumatologic disorder</td>
</tr>
</tbody>
</table>

¹Patients with local or distant metastases and/or in whom chemotherapy or radiotherapy had been performed in the previous 6 mo.
²Anticipated bed rest with bathroom privileges (either because of patient’s limitations or on physician’s order) for at least 3 d.
³Carriage of defects of antithrombin, protein C or S, factor V Leiden, G20210A prothrombin mutation, antiphospholipid syndrome.

Ongoing hormonal treatment

Obesity (BMI ≥ 30 kg/m²)
Caprini Risk Factors for VTE

- Risk factors for VTE in hospitalized surgical patients based on the Caprini Risk Assessment Model
- CHEST 2012 guidelines suggest using LMWH or LDUH for prevention of VTE in surgical* patients with a Caprini score >2 points
  - *General surgery, GI surgery, urological surgery, gynecologic surgery, bariatric surgery, vascular surgery, and plastic/reconstructive surgery

<table>
<thead>
<tr>
<th>Total Risk Factor Score</th>
<th>Risk Level</th>
<th>Incidence of VTE</th>
<th>Prophylaxis Recommendations (Level of Evidence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Intermediate Risk</td>
<td>&lt;10%</td>
<td>No specific pharmacologic agent (1B) or mechanical (2C)</td>
</tr>
<tr>
<td>1-2</td>
<td>Moderate Risk</td>
<td>10-20%</td>
<td>SCDs (2C)</td>
</tr>
<tr>
<td>3-4</td>
<td>High Risk</td>
<td>20-40%</td>
<td>LMWH or LDUH (2B) or SCDs (2C)</td>
</tr>
<tr>
<td>5 or more</td>
<td>Highest Risk</td>
<td>40-80% (1-5% mortality)</td>
<td>LMWH or LDUH (1B) and SCDs (2C)</td>
</tr>
<tr>
<td>Cancer Surgery</td>
<td>Highest Risk</td>
<td></td>
<td>LMWH or LDUH and SCDs</td>
</tr>
</tbody>
</table>

SCDs = Sequential compression devices; LMWH = low molecular weight heparin; LDUH = low dose unfractionated heparin
Reassess ALL patients when acuity level changes
- Patient is actively bleeding
- Patient has a dropping hemoglobin/hematocrit
- Patient is going to surgery
- ICU to floor, floor to ICU, OR to floor
VTE prophylaxis

At admission consider.....

- Pharmacologic prophylaxis
- Mechanical prophylaxis, such as sequential compression devices (SCDs) and/or anti-embolism stockings (TEDs)
Any patient can be excluded from the measure based on the clinician’s documented determination that VTE prophylaxis is not appropriate for an individual patient.

Reason for no prophylaxis must be documented in medical record within first day of hospitalization/ICU admission.
<table>
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<th>Questions:</th>
<th>Prompt</th>
<th>Answer</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. Reason for no mechanical VTE prophylaxis?</td>
<td></td>
<td>Patient Refused</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low Risk for VTE</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Other (Comment)</td>
<td></td>
</tr>
</tbody>
</table>

Note that this is a required field
### VTE

#### VTE Prophylaxis Non-Meds
- **Intermittent Pneumatic Compression**
  - Routine, until discontinued starting today at 14:31 until specified.
  - Side: Bilateral
- **Reason for no mechanical VTE prophylaxis**

#### VTE prophylaxis meds
- **Enoxaparin (LOVENOX) syringe (30mg Q12H)**
  - 30 mg, Subcutaneous, Every 12 hours scheduled (2 times per day)
- **Enoxaparin (LOVENOX) syringe for CrCl < 30 mL/min**
  - 30 mg, Subcutaneous, Daily
- **Enoxaparin (LOVENOX) syringe (40mg daily)**
  - 40 mg, Subcutaneous, Daily
- **Fondaparinux (APRXTA) injection SCLN (not for CrCl < 30 mL/min)**
  - 2.5 mg, Subcutaneous, Daily
- **Heparin (porcine) injection (Q6H)**
  - 5,000 Units, Subcutaneous, Every 6 hours scheduled (3 times per day)
- **Heparin (porcine) injection (Q12H)**
  - 5,000 Units, Subcutaneous, Every 12 hours scheduled (2 times per day)

#### Reason for no VTE prophylaxis meds
- **Details**

### Questions:

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<tr>
<td>1. Reason for no VTE prophylaxis meds?</td>
<td>Active Bleeding, Patient Anticoagulated, Patient Refused, Low Risk for VTE, Other (Comment)</td>
<td></td>
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</table>
Pharmacologic Options

- **Enoxaparin**
  - 40mg subcutaneously daily
  - 30mg subcutaneously q12h
    - Reduce dose to 30mg subcutaneously q24h for patients with CrCl < 30 mL/min
    - Heparin
  - 5000 units subcutaneously q8h
  - 5000 units subcutaneously q12h
    - Consider for low weight (< 45 kg) patients and those at high risk of bleeding

- **Fondaparinux**
  - 2.5 mg subcutaneously daily

- **Rivaroxaban**
  - 10 mg PO daily
    - Only for **THR and TKR** patients or those receiving the medication for atrial fibrillation indication (PLEASE USE RIVAROXABAN ORDER FORM!)
Discuss the following discharge topics:

- How to take Coumadin
- Side effects
- Diet interactions
- Medication interactions
- Need for follow-up monitoring
- The follow-up plan
- Document the patient’s understanding in the discharge summary or paper work
Engage the Team

- **Ensure Multidisciplinary Collaboration for VTE Prevention**
  - Nursing
  - Pharmacy
  - Physical therapy
  - Family
Ongoing Quality Improvements

• MD Collaboration with the patient/family, nursing, pharmacy and physical therapy
  • Conversation at admission regarding the plan of care:
    – Prophylactic VTE medication
    – Frequent ambulation
    – Correct use of sequential compression devices (SCDs) or anti-embolism stockings (TEDs)

• Validate nursing initiatives for VTE prevention with patient and family

• Talk with the patient/family - education on pt television and written informational handouts
Chest 2012; 141;e227S-e277S DOI 10.1378/chest.11-2297


http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_VTE/VTE_Home.cfm

http://ahrq.hhs.gov/qual/vtguide