VTE
Standardized Risk Assessment and Appropriate Prophylaxis
Goal: Reduce the number of potentially preventable hospital acquired VTEs through the implementation and use of a standardized VTE risk assessment/order form. To improve physician compliance and knowledge.

Objectives: Upon completion of this education, the learner will:

• Understand the prevalence and impact of hospital acquired VTEs
• Understand the importance of reducing hospital acquired VTEs
• Understand the need for a standardized process to assess VTE risk and implement appropriate prophylaxis orders
• Understand the CFV process for assessing VTE risk and ordering prophylaxis.
• Understand the VTE Risk Assessment/Orders Form and how and when to complete it.
VTE According to Service (N=384)

<table>
<thead>
<tr>
<th>Service</th>
<th>Total VTE (%)</th>
<th>Number of VTE events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>General surgery</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Medical oncology</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Orthopaedic surgery</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Thoracic surgery</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

VTE: A Major Source of Mortality and Morbidity

• 200,000 VTE deaths per year (half primary)
  – More than HIV, MVAs, Breast Cancer combined
• 80,000 preventable deaths in hospital
• 10% of hospital deaths, most common cause of preventable hospital death
• Huge costs and morbidity
• Recurrence of DVT, post-thrombotic syndrome and chronic PE / PAH are long term sequelae
ICOPER: Cumulative Mortality after Diagnosis

Mortality (%)

Days From Diagnosis

17.5%

ECONOMIC BURDEN OF VTE

PE
$12,148

DVT
$7001

MI
$12,680

Stroke
$11,514

Inpatient Costs

2007: $10,000 / DVT $20,000 / PE

MI = Myocardial Infarction

AHRQ – Statistics from the HCUP-3 nationwide inpatient sample for 1994: DRG.
Good News!
Effective, safe, and cost-effective VTE prophylaxis is available!

• Pharmacologic Prophylaxis reduces DVT and PE by 50-65%
• Symptomatic and Asymptomatic VTE reduced.
• Bleeding risk due to prophylaxis is rare.
• HIT
  – 2.37% with UFH (occasionally very serious)
  – .06% with LMWH
• Cost effectiveness of VTE prophylaxis has been repeatedly demonstrated.

Geerts et al. Chest. 2004 Sep;126(3 Suppl):338S-400S.
Martel – Blood 2005;106:2710
National Position Statements

• Leapfrog\(^1\): PE is “the most common preventable cause of hospital death in the United States”

• Agency for Healthcare Research and Quality (AHRQ)\(^2\): Thromboprophylaxis is the number 1 patient safety practice

• American Public Health Association (APHA)\(^3\): “The disconnect between evidence and execution as it relates to DVT prevention amounts to a public health crisis.”

1. The Leapfrog Group Hospital Quality and Safety Survey. Available at: www.leapfrog.medstat.com/pdf/Final/doc
A lot of things can go wrong…..
Education alone won’t get it done

• Risk assessments for VTE and bleeding not standardized
• Risk assessment fails to occur
• Definitions of appropriate prophylaxis variable
• Conflicting order sets and protocols
• Contributing risks (lines, sedation, restraints)
• Prophylaxis fails to shift with changes in patient status
• Platelet monitoring does not occur
• When to stop prophy uncertain, not standardized.
• Medication changes, weight, age, renal function, recent or impending procedures can alter optimal approach.
• Transitions across providers and locations leads to inconsistent approach.
National Recommendations

- American College of Chest Physicians (ACCP)\(^1\):
  “We recommend that every hospital develop a formal strategy that addresses the prevention of thromboembolic complications.”

- National Quality Forum (NQF)\(^2\):
  “Evaluate each patient upon admission, and periodically thereafter, for the risk of DVT/PE. Utilize clinically appropriate methods to prevent DVT/VTE.” (Safe Practice 17)

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO)\(^3\):
  “Contraindications to DVT prophylaxis must be documented”

3. Available at: www.jcaho.org/pms/core+measures/2adicu3dvt.pdf
Seventh ACCP Consensus

“All institutions should have a program in place that allows for the evaluation of a patient’s risk of developing VTE. If patients are found to be at risk of VTE, appropriate prophylaxis should be implemented (Grade 1A).”

Strategies to Improve Thromboprophylaxis Success

- Excellent quality guidelines
- National body endorsement
- Hospital accreditation (JCAHO)
- Pay for performance (CMS)
- Local written policy (care pathway) for the hospital / program / patient care unit
- Multidisciplinary team
- Goals and Measures
- Standardized risk assessment and order sets
Dramatic Improvement is Possible

- % Adequate VTE Prophylaxis
  (Audit Sample Size Range: 56 - 198 per month)

- Patients w/ Preventable HA VTE

Dramatic Improvement is Possible
Summary

• VTE is a very important source of hospital acquired cost, mortality, and morbidity.
• Effective, safe, and cost-effective medications are available, but underutilized in our institution.
• Increasing scrutiny from multiple agencies
• Institutional prioritization and support needed.
• A roadmap enhancing our chances of success is available.
Our Policy

- Standardized Risk Assessment/Order Form
- Form is completed for every adult patient on admission, transfer to or from ICU, and post-op
- Physician completes risk assessment at top of form and then orders recommended prophylaxis as listed on form
- If contraindications exist-document these on back on form as listed.
- All required documentation is then complete and in one location.
- Permanent part of record
- Incomplete forms will be assigned as a medical records deficiency.
- Trends in deficiency assignments and or failure to complete will be reported at CPIC
Venous Thromboembolism (VTE) Risk Assessment/Orders

CAPE FEAR VALLEY HEALTH SYSTEM
Fayetteville, North Carolina

Venous Thromboembolism (VTE) Risk Assessment/Orders

<table>
<thead>
<tr>
<th>LOW</th>
<th>MODERATE</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anyone not in the LOW or HIGH category Evaluate for risk factors. (See list on reverse)</td>
<td>Patien has a condition. Refer to guidelines for possible treatment.</td>
<td>Patien has a contraindication. Indicate contraindication(s) on reverse.</td>
</tr>
</tbody>
</table>

Treatment

<table>
<thead>
<tr>
<th>LOW</th>
<th>MODERATE</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient meets LOW risk criteria. Ambulation and education</td>
<td>Must Choose ONE from Pharmacological or Mechanical</td>
<td>Must Choose ONE from BOTH Pharmacological and Mechanical, and VTE prophylaxis already ordered</td>
</tr>
<tr>
<td>Patient has a condition. Refer to guidelines for possible treatment.</td>
<td>Patient has a contraindication. Indicate contraindication(s) on reverse.</td>
<td>Patien has a contraindication. Indicate contraindication(s) on reverse.</td>
</tr>
</tbody>
</table>

Exclusions for Pharmacological and Mechanical Thromboprophylaxis

- Active bleeding (ie, Cerebral Hemorrhage, Renal/Genitourinary Bleeding)
- Allergy to URO-LEPPH
- Current GI bleed
- Current Hemorrhage
- Hepatitis B or C infection
- Patient at high risk of bleeding
- Patient on heparin
- Recent or planned spinal tap or epidural anesthesia
- Recent CNS Surgery
- Recent urological surgery
- Therapeutic TEE/TEE/TEE
- Thrombocytopenia
- Uncontrolled Hypertension
- Other

Conclusion: Thromboprophylaxis

- Acute thrombophlebitis
- Bilateral Lower Extremity Amputation
- Bilateral Lower Extremity Trauma
- Deep Vein Thrombosis
- DEEP Venous Thrombosis

Admitting Diagnosis:

PHYSICIAN’S ORDERS TAB 3

PO0005
VTE Risk Assessment/Orders

Does patient meet "LOW" risk criteria?

- YES
  - Check ambulation and education- sign form

- NO
  - Check indication that places them at high risk (i.e. ICU patient, general surgery, etc)
  - Order pharmacologic agent unless there is a contraindication.
  - Order mechanical prophylaxis unless there is a contraindication

Does patient meet "HIGH" risk criteria

- YES
  - Patient meets "Moderate" risk criteria.
    - Assess number of risk factors (see list on back of form)
    - Order pharmacologic agent AND / OR mechanical prophylaxis
    - If patient has 2 or more risk factors order pharmacologic agent unless there is a contraindication

- NO

Contraindications:
- If there is a contraindication to pharmacologic or mechanical prophylaxis: check box under moderate or high risk treatment and indicate the contraindication on the back of the form.
- If the patient is already fully anticoagulated, check this box under the moderate or high risk treatment options- pharmacologic agent not indicated
- If VTE prophylaxis has already been ordered (i.e. as part of a pre-printed order set) check this box under the moderate or high risk treatment options
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• **Coordination:** The CME activity is coordinated through Physician Education of Cape Fear Valley Health System. Dr. Eugene Wright is the Medical Advisor for this symposium. For CME information, call the Office of Physician Education at (910) 615-7038. For questions or comments on the content please contact Marcia Smith, RN, Clinical Educator at (910)-615-7062.

• **Transcripts:** Please direct all CME inquiries and questions to the Office of Physician Education (910) 615-7038.

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