Clinical Safety & Effectiveness
Session # 9

Women’s Health
Venous Thromboembolism

CENTER FOR PATIENT SAFETY & HEALTH POLICY
UT Health Science Center
SAN ANTONIO

Educating for Quality Improvement & Patient Safety
What We Are Trying to Accomplish?  

OUR AIM STATEMENT

The aim of this project is to increase the compliance of ordering Venous Thromboembolism Prophylaxis for at risk 4th Floor Women’s Health Services unit patients at University Hospital from 54% to 95% by February 2012.
The Team

• **CS&E Participants**
  – Michelle Ingram, RN
    • QI&ASenior Director

• **Sponsor Departments**
  – UHS, Quality & Process Improvement and Pharmacy Departments
  – UHS, VTE Core Measurement Team
  – UTHSCA, Dept. of OB/Gyn
  – UTHSCA, Dept. of Family Medicine

• **Support Staff (IT)**
  – Irene Puente

• **Team Members**
  – Elly Marie-Jeanne Xenakis, M.D.
    Obstetrics and Gynecology

  – Mark Funk, M.D.
    Obstetrics and Gynecology

  – Teri Grubbs, RN
    Admin. Dir. Women’s Health

  – Crystal Franco-Martinez, Pharm D
    Clinical Pharmacist, Anticoagulation

  – Carla McDaniel RN
    • Sr. Analyst, Q&PI, Data Abstractor

  – Carol Mancinas, MHA
    • Sr. Analyst, Q&PI, Data Support

• **Facilitator**
  – Amruta Parekh, MD MPH
Background

• **VTE adopted by CMS as a Core Measure**
  – Voluntary participation: Began 4\textsuperscript{th} Qtr 2009
  – Required participation: Anticipate ~Jan 2012
  – Linked to Pay for Performance (P4P)
  – Posted publicly on the Internet w/other Core Measures

• **What Cases are Reviewed?**
  – Hospitals accepting CMS “dollars” contract through a CMS approved vendor.
  – Cases selected by vendor and not by the facility
  – Based on ICD-9 and CPT coding at discharge
  – Each case does not always meet criteria for all measures
    • Meets criteria for VTE prophylaxis at admission but not at d/c
Core Measure Objectives

• Improve Quality of Patient Care
  – Utilization of Best Practice
  – Positive Patient Outcomes
  – Reduce Re-Admissions
  – Provide Care in the most Cost Effective Manner

• Information Provided Publicly on the Internet
  – Provide consumers with quality of care information
  – Provide consumers in making more informed decisions about their healthcare
VTE Core Measures

• **VTE-1** VTE Prophylaxis (*focus of the project*)

• **VTE-2** Intensive Care Unit VTE Prophylaxis

• **VTE-3** VTE Patients with Anticoagulation Overlap Therapy

• **VTE-4** VTE Patients Receiving Unfractionated Heparin with Dosages/Platelet Count Monitoring by Protocol

• **VTE-5** VTE Discharge Instructions

• **VTE-6** VTE Incidence of Potentially-Preventable VTE

*Note: Additionally, there are two VTE measures included in the SCIP Core Measure (Surgical Care Improvement Project)*
Components of VTE-1 Measure

• **Numerator Statement**
  Patients who received VTE prophylaxis *OR* have documentation why no VTE prophylaxis was given

  --- **Medicine Patients** ..... by the end of day 2 from admission (Day 1 is admission date)

  --- **Surgery Patients** ..... based on the correlation between the date of surgery and the admission date.

• **Denominator Statement**
  All patients selected for the review
Included Population

- Patients age 18 and over
- Length of Stay – Inpatient
  - less than 120 days
- Discharged with at least one of the eligible ICD 9 Codes

Quality Net. Venous Thromboembolism National Hospital Inpatient Quality Measures.
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagemenu=QnetPublic%2FPage%2FQnetTier4&cid=1228754600169
Flow Diagram

Two Opportunities to PASS the Measure
Flow Diagram

Page 2 of 2

Five Opportunities to FAIL the Measure

Flowchart Description:

1. **Risk Not Accomplished by end of Day 2 from Admit**
   - **Yes**: Prophylaxis Not Ordered
     - **Was it determined the prophylaxis was NOT needed or CONTRAINDICATED?**
       - **No**: No Determination AND Measure Fails
       - **Yes**: Determination Made
         - **Was it documented?**
           - **No**: No Determination AND Measure Fails
           - **Yes**: Documentation Present BUT Measure Fails

2. **Did Physician Order Prophylaxis without Risk Assessment AFTER end of Day 2**
   - **No**: Prophylaxis Determined
     - **Yes**: Does Patient have a Contraindication to Chemical Prophylaxis
       - **No**: Chemical Prophylaxis Ordered BUT Measure Fails
       - **Yes**: Chemical Contraindication Selected

3. **Prophylaxis Determined**
   - **Is Mechanical Prophylaxis Contraindicated?**
     - **No**: Mechanical Prophylaxis Ordered BUT Measure Fails
     - **Yes**: Mechanical Contra. Selected BUT Measure Fails
Brain Storming
Provider unsure of ordering options within DVT Screen order set, specific to RX

Other SCD orders within existing full order admission set, confusing.

Indicates Cohort #9 – Addition details added to Fish Bone
## Incidence of DVT/PE and Deaths

<table>
<thead>
<tr>
<th></th>
<th>Surgeon General Call to Action 2008</th>
<th>John Heit Data (Mayo Clinic) 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United States</strong></td>
<td>Incidence of DVT/PE</td>
<td>350,000 – 600,000</td>
</tr>
<tr>
<td></td>
<td>Deaths (Mortality)</td>
<td>100,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>900,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300,000</td>
</tr>
<tr>
<td><strong>Texas</strong> (# 2 in the nation)</td>
<td>Incidence of DVT/PE</td>
<td>27,335 - 46,860</td>
</tr>
<tr>
<td></td>
<td>Deaths (Mortality)</td>
<td>7,810</td>
</tr>
<tr>
<td></td>
<td></td>
<td>70,290</td>
</tr>
<tr>
<td></td>
<td></td>
<td>23,430</td>
</tr>
</tbody>
</table>

The Facts

• Over one year, a 300 bed hospital that lacks a systematic approach to VTE prevention can expect roughly 150 cases of hospital-acquired VTE.
• Approx. 5 of those will die from potentially preventable pulmonary embolism.
• Each hospital acquired DVT represents a incremental inpatient cost of $10K, while each PE represents a $20K price tag.

Preventing Hospital-Acquired Venous Thromboembolism A Guide for Effective Quality Improvement. Society of Hospital Medicine, website.
References


Preventing Hospital-Acquired Venous Thromboembolism A Guide for Effective Quality Improvement. Society of Hospital Medicine, website


## VTE Core Measure Data

### Was the DVT Prophylaxis Screening done in Sunrise?

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
<th>Total Count</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Oct 10</td>
<td>70</td>
<td>46.4%</td>
<td>81</td>
<td>53.6%</td>
<td>151</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 1 Oct 17</td>
<td>8</td>
<td>27.6%</td>
<td>21</td>
<td>72.4%</td>
<td>29</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 2 Oct 24</td>
<td>11</td>
<td>33.3%</td>
<td>22</td>
<td>66.7%</td>
<td>33</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 3 Oct 31</td>
<td>10</td>
<td>33.3%</td>
<td>20</td>
<td>66.7%</td>
<td>30</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 4 Nov 7</td>
<td>1</td>
<td>6.7%</td>
<td>14</td>
<td>93.3%</td>
<td>15</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 5 Nov 14</td>
<td>0</td>
<td>0%</td>
<td>19</td>
<td>100%</td>
<td>19</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 6 Nov 21</td>
<td>2</td>
<td>8%</td>
<td>23</td>
<td>92.2%</td>
<td>25</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 7 Nov 28</td>
<td>1</td>
<td>2.6%</td>
<td>38</td>
<td>97.4%</td>
<td>39</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 8 Dec 5</td>
<td>1</td>
<td>3.4%</td>
<td>28</td>
<td>96.6%</td>
<td>29</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 9 Dec 12</td>
<td>0</td>
<td>0%</td>
<td>6</td>
<td>100%</td>
<td>6</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 10 Dec 19</td>
<td>0</td>
<td>0%</td>
<td>13</td>
<td>100%</td>
<td>13</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 11 Dec 26</td>
<td>2</td>
<td>7.7%</td>
<td>24</td>
<td>92.5%</td>
<td>26</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 12 Jan 1</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Week 13 Jan 9</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>100%</td>
<td>1</td>
<td>100.0%</td>
</tr>
<tr>
<td>Week 14 Jan 16</td>
<td>2</td>
<td>9.5%</td>
<td>19</td>
<td>90.5%</td>
<td>20</td>
<td>100.0%</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Was the DVT Prophylaxis Screening Tool Used?

- **No**
- **Yes**

Weeks: baseline, Week 1, Week 2, Week 3, Week 4, Week 5, Week 6, Week 7, Week 8, Week 9, Week 10, Week 11, Week 13, Week 14
OB/GYN VTE Control Chart

CSE - VTE Screening Tool Used

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 6</td>
<td>OB/GYN Faculty Education</td>
</tr>
<tr>
<td>Oct 10</td>
<td>OB/GYN Nursing Education</td>
</tr>
<tr>
<td>Nov 9</td>
<td>OB/GYN Faculty/Resident Education</td>
</tr>
<tr>
<td>Nov 10</td>
<td>Fam. Med Faculty Education</td>
</tr>
<tr>
<td>Dec 7</td>
<td>Planned Fam. Med Faculty/Resident Education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Xbar</th>
<th>UCL</th>
<th>LCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Group</td>
<td>0.802654</td>
<td>1.310644</td>
<td>0.294663</td>
</tr>
<tr>
<td>Second Group</td>
<td>0.802654</td>
<td>1.310644</td>
<td>0.294663</td>
</tr>
</tbody>
</table>
OB/GYN VTE Control Chart

CSE - VTE Screening Tool Used

<table>
<thead>
<tr>
<th>VTE Screen Tool Used</th>
<th>Xbar</th>
<th>UCL</th>
<th>LCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>first group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xbar</td>
<td>0.874084</td>
<td>1.336335</td>
<td>0.411833</td>
</tr>
<tr>
<td>second group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xbar</td>
<td>0.874084</td>
<td>1.336335</td>
<td>0.411833</td>
</tr>
</tbody>
</table>

No data week 12