VTE Reduction

STARTER PACK – WEBINAR #1
Why is it important to reduce VTE?
Why VTE Reduction?

• Key Statistics
  – 350,000 to 600,000 VTE’s annually
  – 100,000 of these patients die
  – One of the most common causes of preventable hospital death
  – Increased LOS and 10-15 percent die
Why VTE Reduction?
Why VTE Reduction?

- **Acute Inpatient Costs**
  - Average $8,000 per event

- **Long Term Costs**
  - Causes long term sequelae
  - 40% may suffer a recurrent event within 10 years
Why VTE Reduction?
Can we prevent VTE?
Can It Be Done?

Effective means exist to reduce VTE but are not routinely or systematically applied.
Can It Be Done?

- Mayo Clinic, December, 2016\(^1\):
  - Required physician risk assessment as part of EMR pathway
  - Increased appropriate prophylaxis to 97% (CMS VTE-1 and VTE-2)
  - Reduced preventable VTE’s to zero for three consecutive quarters (VTE-6)

Can It Be Done?

• Johns Hopkins, December, 2016\(^2\):
  – used a variety of approaches that increased risk-appropriate prophylaxis to 96% and reduced preventable VTE by >80%

Can It Be Done?
Getting Started
Project Goal

• HIIN goal -20% reduction in post-operative VTE
• Great Lakes is one of 16 HIINs working to achieve this bold goal!
First Things First

- Ask:
  - Are we ready?
  - Is there urgency?
  - Is there leadership support?
  - Who owns this effort?
  - What resources are needed?
  - What if we are not ready for full-scale change?

- Assess the readiness before you proceed
Establishing Your Team

• Successful VTE teams are multi-disciplinary
• Who do you need on your team?
  • Executive Champion – senior leader who will provide support
  • Team Leader – a person with authority to test the change ideas
  • Team Members –
    • Physicians, Pharmacists, Front Line Nursing, IT, Biomed, Physical Therapy, Patient/Family Advisor
Tips for Effective Meetings

• Plan ahead
  – Set the agenda
  – Gather data/materials
  – Do pre-work

• Be brief
  – there is no rule that says a meeting needs to last an hour!

• Timed Agenda

• “Parking Lot”

• Take “actionable” minutes

• FOLLOW UP
Summary of Required Practices

• Risk screen every patient on admission and after change in status
  – Physician must do it
• Risk screen must drive appropriate prophylaxis order selections
• Engage nurses and patients
• Employ “measure-vention”
• PDSA...PDSA...PDSA...Create Learning Loops
Risk Screen Every Patient

- **Hardwire** into the admission order sets and unit to unit transfer order sets a *process that requires the physician to determine the patient’s risk for VTE*

- **Hardwire process that requires the physician to determine patient’s risk for bleeding**
Risk Screen Every Patient

• Why the physician and not the nurse?
  – Knows the history
  – Knows the risk
  – Drives the orders
But How?

• Use standard risk assessment tools
• Allow for specialty variation
  – American College of Physicians
  – American College of Chest Physicians
  – American Academy of Orthopedic Surgeons
  – Society of Hospital Medicine
  – OB, Neurosurgery, Trauma, Oncology, etc.
• Allow for patient driven variation
Let’s Simplify This a Little

• Quantitative Risk assessment models (point scoring)
  – Caprini
  – Padua
  – Others

• Limited validation

• Unpublished records of success with Caprini at U. of Wisconsin and U. of Michigan

Let’s Simplify This a Lot

• UC San Diego Updated 3 Bucket model\(^4\)
  – Qualitative
  – Validated
  – Simple
  – Proven to work in broad range of hospitals
  – Most widely used

\(^4\)AHRQ VTE Guide, Chapter 4.
### UC San Diego Updated 3 Bucket Model

| Low Risk: Observation status, expected LOS <48 hours. Minor ambulatory surgery unless multiple strong risk factors. Medical patients ambulatory in hall and not moderate or high risk. Ambulatory cancer patients admitted for short chemotherapy infusion. | No prophylaxis; reassess periodically, ambulate. |
| Moderate Risk (most general medical/surgical patients): Most general, thoracic, open gynecologic, or urologic surgery patients. Active cancer or past VTE/known thrombophilia in medical patient with LOS >48 hours. Medical patients with decrease in usual ambulation AND VTE risk factors (myocardial infarction, stroke, congestive heart failure, pneumonia, active inflammation/infection, dehydration, age >65). | UFH or LMWH prophylaxis* |
| High Risk: Hip or knee arthroplasty, hip fracture surgery, multiple major trauma, spinal cord injury or major neurosurgery, abdominal-pelvic surgery for cancer. | IPCD AND LMWH or other anticoagulant* |

* For those at moderate or high VTE risk and contraindications to anticoagulation, use IPCD alone until bleeding risk subsides.
And Now Comes The Magic!

- Because the physician assesses and documents the risks of both VTE and bleeding...
- The physician is only presented with the prophylaxis choices appropriate for that specific patient’s risk!
Nurses/Patients Must Also Be Engaged

• Nurses and Patients often do not know the risks of VTE (frequency, morbidity, mortality)
• Prophylaxis is not fun
• Prophylaxis is work
• Failure to do it correctly every day leads to increased risk of VTE
• Correct risk assessment + correct orders + occasional lapses in order implementation

= FAILURE
Nurses/Patients Must Also Be Engaged

• Nurses are key
  – Nurses must understand that prophylaxis is important
  – Nurses must understand any process failure puts the patient at increased risk

• Patients are key
  – Patients want to know the risks/consequences of VTE
  – Patients want to hear of the risks / benefits / alternatives of prophylaxis
  – Patients want this discussion with their doctor!
Why is This So Hard?

• Ambulation
  – Studies show that only 27% of patients who can walk in the hospital actually walk (Callan, 2004)
  – What is “ambulation”?
  – “Get Up and Go” (1986)

https://www.healthcare.uiowa.edu/igec/tools/mobility/getUpAndGo.pdf
Subcutaneous anticoagulants

- It hurts
- It bruises
- Patients often decline one or more doses
Sequential Compression Devices

- Where does the nurse get one when ordered?
Sequential Compression Devices

• The best place to find them is...
Graduated Compression Stockings? VTE Prevention?

• Possibly effective in surgery patients (Cochrane, 2014)
  – Need to be started one day prior to surgery
• Not effective in medical patients (ACP, 2011)
Employ “Measure-vention”

• How many lives do we save by finding “failure” after discharge?
• Can we find failure in real time?
What is “Measure-vention”

- It is very hard to implement a process that works >95% of the time
- So do one that works 80% of the time
- Find the 20% failures
- Correct 80% of those......
- Your process is now >95%

Roger Resar, IHI
How Does That Work With VTE?

- Monitor all patients every 24 hours (0700?)
  - Can be done at unit or even nurse level
  - Manually or electronically
- Identify patients without orders appropriate for risk
- Identify patients not receiving prophylaxis as ordered
- Intervene
Manual Measure-vention

- At beginning of shift huddle
- Has the risk of VTE changed?
- Has the risk of bleeding changed? (e.g. falling?)
- Is the patient receiving the ordered pills, SQ injections or SCD’s or ambulation?
- If risk has changed, contact physician (scripted?)
- If not receiving orderd prophylaxis, understand why, make necessary changes
### Electronic Measure-vention

<table>
<thead>
<tr>
<th>BED_LABEL</th>
<th>VTE Risk Category</th>
<th>Medication</th>
<th>Dose</th>
<th>SCD order</th>
<th>SCD On</th>
<th>Ac Contraindication</th>
<th>Braden Activity</th>
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</thead>
<tbody>
<tr>
<td>601A</td>
<td>Low</td>
<td>No Anticoag Med</td>
<td>No Anticoag Dose</td>
<td>N</td>
<td>No SCD</td>
<td>N</td>
<td>Walks Frequently</td>
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<tr>
<td>601B</td>
<td>Moderate</td>
<td>No Anticoag Med</td>
<td>No Anticoag Dose</td>
<td>Y</td>
<td>On</td>
<td>Y</td>
<td>Chairfast</td>
</tr>
<tr>
<td>608B</td>
<td>Moderate</td>
<td>enoxaparin (LOVEN)</td>
<td>40 mg DAILY Subcutaneous</td>
<td>N</td>
<td>No SCD</td>
<td>N</td>
<td>Walks Frequently</td>
</tr>
<tr>
<td>609A</td>
<td>Low</td>
<td>No Anticoag Med</td>
<td>No Anticoag Dose</td>
<td>N</td>
<td>No SCD</td>
<td>N</td>
<td>Walks Frequently</td>
</tr>
<tr>
<td>609B</td>
<td>Moderate</td>
<td>heparin injection 5,000 Units EVERY 12 HOURS</td>
<td>N</td>
<td>No SCD</td>
<td>N</td>
<td>Walks Occasionally</td>
<td></td>
</tr>
<tr>
<td>611A</td>
<td>High</td>
<td>enoxaparin (LOVEN)</td>
<td>40 mg DAILY Subcutaneous</td>
<td>Y</td>
<td>Off</td>
<td>N</td>
<td>Chairfast</td>
</tr>
<tr>
<td>611B</td>
<td>Moderate</td>
<td>enoxaparin (LOVEN)</td>
<td>40 mg DAILY Subcutaneous</td>
<td>N</td>
<td>Patient Refusal</td>
<td>N</td>
<td>Walks Occasionally</td>
</tr>
<tr>
<td>612A</td>
<td>Moderate</td>
<td>No Anticoag Med</td>
<td>No Anticoag Dose</td>
<td>Y</td>
<td>Patient Refusal</td>
<td>N</td>
<td>Bedfast</td>
</tr>
<tr>
<td>612B</td>
<td>Low - Anticoagulant</td>
<td>enoxaparin (LOVEN)</td>
<td>1 mg/kg EVERY 12 HOURS</td>
<td>N</td>
<td>No SCD</td>
<td>N</td>
<td>Chairfast</td>
</tr>
<tr>
<td>615A</td>
<td>Moderate</td>
<td>No Anticoag Med</td>
<td>No Anticoag Dose</td>
<td>Y</td>
<td>On</td>
<td>N</td>
<td>Chairfast</td>
</tr>
</tbody>
</table>
Develop your learning loop
• Small tests of Change/Rapid Cycle
Keep Learning as You Spread

Few → Unit → More Specialties → Whole House
Key Resources for More Information

Improvement Guides


Key Resources for More Information

Medical Society Clinical Guidelines:


Understanding the Measures

HOW WILL YOU KNOW THAT YOU’RE MAKING A DIFFERENCE?
### Perioperative PE or DVT (PSI-12)  
#### All Facilities

<table>
<thead>
<tr>
<th>PE/DVT: CMS HIIN Evaluation Measure (AHRQ PSI 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of surgical patients that develop a perioperative PE or DVT</strong></td>
</tr>
</tbody>
</table>

#### Measure type  
**Numerator**: Number of discharges with administrative codes for deep vein thrombosis (DVT) or pulmonary embolism (PE) in any secondary diagnosis field.

**Denominator**: Number of surgical discharges age 18 and older defined by specific DRGs or MS-DRGs and an administrative code for an operating room procedure.

**Exclusions**:
- Cases with principal diagnosis for pulmonary embolism or proximal deep vein thrombosis
- Cases with secondary diagnosis for pulmonary embolism or proximal deep vein thrombosis present on admission
- Cases in which interruption of vena cava occurs before or on the same day as the first operating room procedure
- Obstetric discharges

#### Rate calculation

\[
\text{Rate} = \frac{\text{number of discharges with code for DVT or PE}}{\text{number of surgical discharges}} \times 1,000
\]

#### Specifications/definitions

Available from AHRQ:
- PSI 12
- PSI Appendix E
- PSI Appendix A

#### Sources/Recommendations

Surgical Discharge Specifications:
- Operating Room Procedure Codes:

#### Data source(s)

Administrative Claims data

#### Automatic transfer from

Inpatient databases (MI, IL, WI)

#### Baseline period

Calendar year 2014

#### Data collection period

Monthly, beginning 2016 Q4

#### KDS Survey Name

VTE PSI

#### KDS Measure ID(s)

KDS-HIIN-VTE-1

#### PfP Measure Name

PSI12
Gap Analysis
WHAT IT IS AND HOW YOU USE IT
What is the Current State of VTE Prevention?
What and How

• A tool that will help you understand what’s currently in place and not in place in your facility
• Check items that are in place
• Prioritize gaps based on learnings
VTE Reduction Gap Analysis

- Domains
  - Contact info
  - Foundation
  - HIT
  - Best practices
  - Help

GREAT LAKES – VTE REDUCTION – GAP ANALYSIS SURVEY

Contact information:

The foundation:

1. Has an executive champion been named to support this work? Y/N
2. Has a measurable organizational AIM been established? Y/N
3. Has a multi-disciplinary team been identified? Y/N
4. Does team meet regularly (at least monthly)? Y/N
5. Has VTE data analysis been obtained or performed internally? Y/N
6. Are VTE events reviewed using pt. interview and case review to determine if the VTE was preventable? Y/N
7. Are VTE events reviewed using pt. interview and case review to determine if there were process failures? Y/N
8. Does monthly tracking of the VTE rate occur? Y/N
9. Does monthly tracking of key processes occur? Y/N
10. Is the monthly VTE data shared with all staff? Y/N
11. Does the organization prioritize improvement efforts based upon learnings from data and analysis? Y/N
12. Is there a written description of your VTE reduction program? Y/N

Health information technology:

1. Do you use an EHR for physician order entry? (If No/skip to Question 4) Y/N
2. Does the EHR have the capability to have risk assessment protocols within the workflow? Y/N
3. Can the EHR populate orders limited to those appropriate for the identified risk level? Y/N
4. Do you use paper physician order entry? (If No/Skip to Question 6) Y/N
5. Do you use standard paper orders that link risk assessment to orders? Y/N
6. Does the EHR allow for entry of patient’s level of ambulation (often from the Braden scale)? Y/N
7. Can the EHR flag process failures (medication or SCD not given/applied)? Y/N

Best practices:

1. Upon every admission, does the physician use and document a standard model to assess the patient’s risk of VTE? Y/N
2. Upon every admission, does the physician use and document a standard model to assess the patient’s risk of bleeding? Y/N
3. Once the risk assessment is documented, does the process only allow the physician to choose prophylaxis options appropriate to the chosen risk level? Y/N
4. Does every physician discuss with every patient the risks and consequences of VTE? Y/N
5. Does every physician discuss with every patient the risks/benefits/alternatives for prophylaxis? Y/N
6. Do all nurses understand the risks/ consequences of VTE? Y/N
7. Do all nurses understand the increased risk of VTE for any single process failure? Y/N
8. Do you have a policy that ensures that every patient will be ambulated daily by a nurse? Y/N
Your First/Next Steps
GET GOING
Stop Talking. Start Doing.

“The way to get started is to quit talking and begin doing.”

- Perform your Gap Analysis
- Access the Resources provided - make notes and ask questions
- View Webinar #2
  - How to engage and involve stakeholders
  - Learn about PDSA and Small Tests of Change
- Decide the next level of HIIN support
  - Onsite assistance
  - Improvement Action Network
  - Other
Where to find the Resources

Keystone Center Quality Initiatives

Folders

- Keystone Center Quality Initiatives
  - General HIIN information
  - Adverse Drug Events (ADE)
  - Antibiotic Stewardship (AMS)
    - AMS Starter Pack
    - AMS Resources
  - Clostridium difficile (C Diff)
    - C.Diff/AMS Starter Pack
    - C.Diff/AMS Resources
  - Catheter-associated Urinary Tract Infections (CAUTI)
    - CAUTI Starter Pack
    - CAUTI Resources
  - Central Line-associated Blood Stream Infections (CLABSI)
    - CLABSI Starter Pack
    - CLABSI Resources

Folder Contents

- GAP Analysis
- Webinar 1
- Webinar 2
HTTP://WWW.GREATLAKESPFP.ORG/