HRET HIIN VTE Virtual Event

STOP VTE: 1 – 2 – 3!

JUNE 4, 2018
WELCOME AND INTRODUCTIONS

Lisandra Cuadrado, Program Manager | HRET
Poll: How did you hear about this event?

How did you hear about today’s virtual event?

a. HRET HIIN flyer
b. HRET HIIN website
c. HRET LISTSERV
d. State hospital association
e. QIN-QIO
f. Your organization/colleague
g. Other, please specify
## Agenda for Today

**STOP VTE: 1 – 2 – 3!**

*June 4, 2018 | Virtual | 10:00-11:00 AM CT*

<table>
<thead>
<tr>
<th>Time</th>
<th>Objectives</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>10:00-10:03 AM</td>
<td>Welcome and Introductions</td>
<td>Lisandra Cuadrado</td>
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<tr>
<td></td>
<td></td>
<td>Program Manager, HRET</td>
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<tr>
<td>10:03-10:08 AM</td>
<td>Data Update</td>
<td>Vrinda Mahishi</td>
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<td></td>
<td></td>
<td>Data Analyst, HRET</td>
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<tr>
<td>10:08-10:15 AM</td>
<td>The 1 – 2 – 3 Pathway to Stop VTE</td>
<td>Steven Tremain, MD, FACPE</td>
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<tr>
<td></td>
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<td>Maryanne Whitney, RN, MSN, CNS</td>
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<td></td>
<td></td>
<td>Improvement Advisors</td>
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<tr>
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<td>Cynosure Health</td>
</tr>
<tr>
<td>10:15-10:40 AM</td>
<td>Shining the Light on the Bright Spots</td>
<td>Paula M. Staggs, RN, CPHQ, CLHCP</td>
</tr>
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<td>AVP Quality Improvement</td>
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<td>Martin Health System</td>
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<td></td>
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<td>Kim Kinsey, RN</td>
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<td>Quality Specialist</td>
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<td>Central Florida Health</td>
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<tr>
<td>10:40-10:55 AM</td>
<td>Open Discussion</td>
<td>All</td>
</tr>
<tr>
<td>10:55-11:00 AM</td>
<td>Bring It Home</td>
<td>Lisandra Cuadrado</td>
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<tr>
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<td></td>
<td>Program Manager, HRET</td>
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</tbody>
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DATA UPDATE

Vrinda Mahishi | Data Analyst | HRET
VTE Data

- Results limited to hospitals that reported baselines for a timeframe on or after the implementation of ICD-10, but prior to the start of HIIN.
- For these results, HRET limited baseline data to records representing the 4Q2015-3Q2016 timeframe. Baseline prior to this timeframe is not comparable.
- 10.7% relative reduction from baseline across 351 hospitals with applicable baseline and monitoring data.
THE 1 – 2 – 3 PATHWAY TO STOP VTE

Steve Tremain, MD, FACPE & Maryanne Whitney, RN, MSN, CNS
Improvement Advisors | Cynosure Health
Polling Question

• Do you have a standard VTE risk assessment that drives prophylaxis orders?
  a. Yes, it is built into the physicians workflow and it must be used.
  b. Yes, but it is optional.
  c. No.
Polling Question

• Do you track patient refusals for VTE prophylaxis, AND have a process to reduce refusals?
  a. Yes.
  b. No.
  c. Never really thought much about this.
Effective VTE Prophylaxis

• 3 parts:
  – Standard Risk Assessment +
  – Risk Assessment drives orders +
  – Orders reliably implemented.

• Any one failure, even a brief one, in this cascade undermines VTE prevention and can allow clot formation.
Effective VTE Prophylaxis

1 + 1 + 1 = Prophylaxis

No Partial Credit
1. Standard Risk Assessment

• What?
  – Standard risk assessment for VTE and for bleeding

• Which assessment?
  – Modified 3 Bucket (UCSD), Caprini

• Who?
  – The physician

• When?
  – Upon admission, transfer, and change of status

• Why?
  – To initiate appropriate prophylaxis orders
Most Commonly *Used Qualitative* Risk Assessment Model

- UCSD Modified 3 Bucket Model

**Figure 4.3: Updated “3 Bucket” Model In Use at UC San Diego**

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Description</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Risk</strong></td>
<td>Observation status, expected LOS &lt;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.</td>
<td>No prophylaxis; reassess periodically, ambulate.</td>
</tr>
<tr>
<td><strong>Moderate Risk</strong></td>
<td>Most general, thoracic, open gynecologic, or urologic surgery patients. Active cancer or past VTE/known thrombophilia in medical patient with LOS &gt;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 &gt;65).</td>
<td>UFH or LMWH prophylaxis*</td>
</tr>
<tr>
<td><strong>High Risk</strong></td>
<td>Hip or knee arthroplasty, hip fracture surgery, multiple major trauma, spinal cord injury or major neurosurgery, abdominal-pelvic surgery for cancer.</td>
<td>IPCD AND LMWH or other anticoagulant*</td>
</tr>
</tbody>
</table>

* For those at moderate or high VTE risk and contraindications to anticoagulation, use IPCD alone until bleeding risk subsides.
Most Commonly Used *Quantitative* Risk Assessment Model

- **Caprini**

### B.10 Caprini Individualized Point-Based (Quantitative) Model of VTE Risk Assessment

<table>
<thead>
<tr>
<th>Each Risk Factor Represents 1 Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 41-60 years</td>
</tr>
<tr>
<td>Swollen legs (current)</td>
</tr>
<tr>
<td>Varicose veins</td>
</tr>
<tr>
<td>Obesity (BMI &gt;25)</td>
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<tr>
<td>Minor surgery planned</td>
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<tr>
<td>Sepsis (&lt;1 month)</td>
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<tr>
<td>Serious lung disease including pneumonia (&lt;1 month)</td>
</tr>
<tr>
<td>Oral contraceptives or hormone replacement therapy</td>
</tr>
<tr>
<td>Pregnancy or postpartum (&lt;1 month)</td>
</tr>
<tr>
<td>History of unexplained stillborn infant, recurrent spontaneous abortion (≥3), premature birth with toxemia or growth-restricted infant</td>
</tr>
<tr>
<td>Other risk factors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Each Risk Factor Represents 2 Points</th>
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<tbody>
<tr>
<td>Age 61-74 years</td>
</tr>
<tr>
<td>Central venous access</td>
</tr>
<tr>
<td>Arthroscopic surgery</td>
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<tr>
<td>Malignancy (present or previous)</td>
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<tr>
<td>Laparoscopic surgery (≥45 minutes)</td>
</tr>
<tr>
<td>Patient confined to bed (≥72 hours)</td>
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<tr>
<td>Immobilizing plaster cast (&lt;1 month)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Each Risk Factor Represents 3 Points</th>
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</thead>
<tbody>
<tr>
<td>Age 75 years or older</td>
</tr>
<tr>
<td>Family History of thrombosis*</td>
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<tr>
<td>History of DVT/PE</td>
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<tr>
<td>Positive Factor V Leiden</td>
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<tr>
<td>Positive Lupus anticoagulant</td>
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<tr>
<td>Elevated serum homocysteine (H2S)</td>
</tr>
<tr>
<td>Heparin-induced thrombocytopenia (HIT)</td>
</tr>
<tr>
<td><em>most frequently missed risk factor</em></td>
</tr>
</tbody>
</table>

**Factors Associated with Increased Bleeding**

Patient may not be a candidate for anticoagulant therapy

**Consider SCDs if:** Active bleeding. Already receiving prophylaxis, BMT patient without indication for anticoagulation per UM protocol, Glycoprotein IIb/IIIa inhibitors, hemophilia or significant bleeding disorder, recent CNS bleed, intracranial or spinal lesion at high risk of bleeding, recent major operation at high risk for bleeding, systemic anticoagulant (non warfarin or INR > 2.0), thrombocytopenia (platelets > 50.000)

**Clinical Considerations for the Use of Sequential Compression Devices**

Patient may not be a candidate for SCDs

**Alternative prophylactic measures should be considered if:** Severe peripheral vascular disease (ABI ≤ 0.5), Severe CHF, compartment syndrome of affected extremity, fracture of affected extremity, local conditions such as: gangrena, recent skin graft, or open wound of the affected extremity, known or suspected acute/subacute DVT (apply SCDs to contralateral limb if indicated)

<table>
<thead>
<tr>
<th>Total Risk Factor Score</th>
<th>Risk Level</th>
<th>Prophylaxis Regimen</th>
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<tbody>
<tr>
<td>0</td>
<td>Very low</td>
<td>__ Early ambulation</td>
</tr>
<tr>
<td>1-2</td>
<td>Low</td>
<td>__ Sequential Compression Device (SCD)</td>
</tr>
</tbody>
</table>
| 3-4                     | Moderate   | Choose ONE of the following medications +/- compression devices:  
|                         |            | __ Sequential Compression Device (SCD) - Optional  
|                         |            | __ Heparin 5000 units SQ TID  
|                         |            | __ Enoxaparin/Lovenox:  
|                         |            | __ 40mg SQ daily (WT < 150kg, CrCl > 30mL/min)  
|                         |            | __ 30mg SQ daily (WT < 150kg, CrCl = 10-29mL/min)  
|                         |            | __ 30mg SQ BID (WT > 150kg, CrCl > 30mL/min)  
|                         |            | (Please refer to Dosing Guidelines on the back of this form)  |
| 5 or more               | High       | Choose ONE of the following medications PLUS compression devices:  
|                         |            | __ Sequential Compression Device (SCD)  
|                         |            | __ Heparin 5000 units SQ TID (Preferred with Epidurals)  
|                         |            | __ Enoxaparin/Lovenox (Preferred):  
|                         |            | __ 40mg SQ daily (WT < 150kg, CrCl > 30mL/min)  
|                         |            | __ 30mg SQ daily (WT < 150kg, CrCl = 10-29mL/min)  
|                         |            | __ 30mg SQ BID (WT > 150kg, CrCl > 30mL/min)  
|                         |            | (Please refer to Dosing Guidelines on the back of this form)  |

__ Ambulatory Surgery – No orders for venous thromboembolic prophylaxis required  
__ VTE Prophylaxis Contraindicated, Reason: ________________________________

**UMHS Enoxaparin Dosing Guidelines**

*ABW = Actual Body Weight

**Non-Pregnant Patients**

CrCl ≥ 30 mL/min:

- Enoxaparin 40 mg SQ once daily (for ABW ≤ 150 kg, non-trauma patient)
- Enoxaparin 30 mg SQ every 12 hours (for ABW > 150 kg)
- Enoxaparin 30 mg SQ every 12 hours (regardless of ABW for trauma patients)

CrCl < 30 mL/min: Enoxaparin 30 mg SQ once daily (regardless of ABW)
Which to Use?

• Simple vs Complex
• Perfect vs Good Enough
• Pitfalls of “Perfect”

• More more detailed information, see files pod or [https://www.ahrq.gov/sites/default/files/publications/files/vteguide.pdf](https://www.ahrq.gov/sites/default/files/publications/files/vteguide.pdf) (Chapter 4)
2. Orders Driven by Risk

• Must be linked
• Low: ambulation
• Medium: ambulation + chemo or mechanical prophylaxis
• High: ambulation + chemoprophylaxis + mechanical prophylaxis
2. Orders Driven by Risk

• Once the physician has determined the risk...

• ONLY order choices appropriate for that risk should appear.

• EXAMPLE:
  – “As a customer with dairy allergy, I was thrilled to find out that they had a menu especially for me!”
3. Rigorous Implementation of the Orders

• Patient education upon or before admission
  – Set expectations

• The role of the nurse
  – Understanding the need
  – Understanding the risks of non-adherence
  – Patient education

• What happens when the patient refuses?
  – What are the options available to the nurse?
Polling Question:

What is the nurse most likely to do if the patient refuses?

a. Nothing
b. Try to educate (Is the nurse educated?)
c. Bring back another nurse
d. Go get his/her supervisor
e. Call the physician
f. Ask the physician to come to the bedside
HOSPITAL STORIES:
SHINE THE LIGHT ON THE BRIGHT SPOTS
VTE PREVENTION
HOSPITAL STORY

Martin Health System
Paula M. Staggs, RN, BSN, CPHQ, LCHCP
About Us

Martin Health System

Not-for-profit, community-based

Three hospitals totaling 521 beds – 244 at Martin Medical Center, 100 at Martin Hospital South and 177 at Tradition Medical Center – one MediCenter, a free-standing emergency center, and numerous outpatient centers and clinics.

- 4,500 associates
- 800 affiliated physicians
- 900 volunteers,

Values: Innovation, Collaboration, Accountability, Respect and Excellence (ICARE)

In 2017, Forbes ranked Martin Health System as among the best 300 mid-size employers in the USA!
Our Story

- Identified VTE PSI 12 performance above our expected performance threshold. Analyzed our data in EMR and performed Gemba’s (Billing workflow, MD ordering VTE prophylaxis determination, existing Order Sets, Nursing practice, PT and ancillary service handoff) in facilities to get comprehensive Gap Analysis. Two key areas identified: No VTE risk stratification with prophylaxis guideline standards to hold physicians accountable nor any Pre Billing Analysis of hospital acquired VTE cases to validate actually hospital acquired.

Set two goals: 1. Development of standardized VTE Order Set using the ‘3 Bucket model’ with built in Best practice alert with hard stop. 2. Work queue for all hospital acquired VTE patients and ID team to analyze and validate all cases.
MHS performance trends

**Started A3**
- Implemented Order Set with Risk Stratification

**Work que and ID Team CCA**
- Implemented Best Practice Alert with Risk Stratification
- Variation MD opinion/avoidable
- Hand Off From procedures treatment

**Sustained:**
- FY17 2.6
- FY18 TD 1.81

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<th>Jan-16</th>
<th>Feb-16</th>
<th>Mar-16</th>
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<td>3.57</td>
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<td>2.05</td>
<td>1.99</td>
<td>0.00</td>
<td>1.78</td>
<td>3.56</td>
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American Hospital Association

HRET
Barriers/Successes

VTE Risk Stratification in EMR

Aligned reasons for Not using Prophylaxis with PSI 12

Low Risk: Mechanical Prophylaxis Recommended
- Minor/Ambulatory Surgery
- Expected LOS <48 hrs
- Age <50 and NO other Risk Factors
- Patients not on Pharmacological prophylaxis

- Place sequential compression device
  - Routine, starting 7/19/17
  - Reason for no mechanical VTE prophylaxis

High Risk: Pharmacological & Mechanical Prophylaxis Recommended
- Elective Hip or Knee Arthroplasty
- Acute Spinal Cord Injury with Pareisis
- Multiple Major Trauma
- Abdominal or Pelvic Surgery for Cancer

Medium Risk: Pharmacological Prophylaxis Recommended
- General, Thoracic, Open Gynecologic, or Urologic Surgeries
- Medical Patients with Impaired Mobility or Acute Illness

AHRQ VTE Prevention Hospital Quality Guide
- enoxaparin (LOVENOX) SQ injection: ONLY FOR PATIENTS WEIGHING < 100 KG AND CRCL > 30 ML PER MIN
  - 40 mg, Subcutaneous, Every 24 hours
- enoxaparin (LOVENOX) SQ injection: ONLY FOR OBESE PATIENTS WEIGHING >100 KG AND CRCL > 30 ML/MN
  - 0.5 mg/kg, Subcutaneous, Every 24 hours
- heparin, porcine (PF) (HEPARIN) injection: ONLY FOR PATIENTS ON DIALYSIS OR WITH CRF
  - 5,000 Units, Subcutaneous, Every 8 hours (5 times per day)
  - Reason for no pharmacological vte prophylaxis

Ordering mechanical VTE prophylaxis:
1. AHROQ Guidelines
2. Low Risk for VTE

Ordering Pharmacological VTE prophylaxis:
1. AHRQ Guidelines
2. Low Risk for VTE

- Active/Increased risk of bleeding
- Fully ambulatory - Low Risk for VTE
- Active gastrointestinal ulcer
- PLT <50K or <100K downtrending
- Therapeutic levels of anticoagulation
- Advanced liver disease with INR > 1.4
- Heparin induced thrombocytopenia
- Intracranial bleed w/in 1 yr unless cleared
- Intracranial surgery w/in 2 wks
- Post-op bleeding concerns (see link for add'l info)
- Untreated inherited bleeding disorders
- Hypertensive urgency/emergency
- Epidural/spinal anesthesia w/in 4h or expected in 12h
- Uncomplicated Pregnancy Vaginal Delivery
- Orthopedic Patient - Aspirin ordered
VTE Work que Common Cause Analysis

**Work que** captures patients with PSI 12 criteria

**Quality Review** 3 potential findings:
1. Fail
2. Coding error
3. MD documentation omission
   - *If Fail* release to bill

**Bill Released.**

**Re Coded**
And / Or
**Query to MD**
along with **MD to MD** collegial ‘coffee conversation’

**Interdisciplinary Review** / Agreement to finding
Keys to Success

• Link your PI efforts to your Organizations Strategic Plan
  – Promotes buy in
  – Gives the C suite something to speak to the board about

• A comprehensive Gap analysis including going to the Gemba
  – Interdisciplinary Team (Nursing, Therapies, MD’s, LIP’s, Ancillary departments)

• Create a Standard Work to sustain success (workque and BPA)
  – Include ongoing measurement of Gaps, analyze and improve.
Advice for Others

1. Entire care team accountability important but assign roles VTE prevention

Our model:

• Physician – Risk stratification and ordering correct prophylaxis
• Clinical (RN, PCT, Therapies, Radiology, OR’s, Wound Care, etc.) – executing the orders and communicating to care team (white board, hand off)

2. Gemba musts:

• Observe clinical teams habits of reapplication of SCD’s post therapy, procedure or ambulation.
• Observe documentation in chart match patient current state

3. Sustain:

• Include IS/EMR
NEVER, EVER GIVE UP!
Next Steps

• Get Up:
  – Formulating ICU Trial at TMC location; apply TeamSTEPPS

• Questions?

Contact:
Paula M. Staggs, BSN, CPHQ
paula.staggs@martinhealth.org
VTE PREVENTION
HOSPITAL STORY

CENTRAL FLORIDA HEALTH
LEESBURG REGIONAL MEDICAL CENTER

Kim Kinsey, RN
Who We Are

Central Florida Health/Leesburg Regional Medical Center

A 329 bed hospital, serving Central Florida for more than 50 years. Our team specializes in cardiology, orthopedics, neurosciences, minimally invasive surgery, obstetrics, pediatrics and stroke care.
Prior to 2017, we had a hard-wired process where nurses did a VTE risk assessment on admission.

In August 2017 we changed EMRs to Cerner, using a physician driven process for VTE prophylaxis with nursing as a back up.

We immediately had more fall outs in one month than we had the prior year.

Changes had to be made.
### Measures/Trending

<table>
<thead>
<tr>
<th>LRMC</th>
<th>Q1-16</th>
<th>Q2-16</th>
<th>Q3-16</th>
<th>Q4-16</th>
<th>Q1-17</th>
<th>Q2-17</th>
<th>Q3-17</th>
<th>Q4-17</th>
<th>Q1-18</th>
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<tbody>
<tr>
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<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
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**LRMC - Post Op DVT / PE Hospital Acquired Conditions**

- Education push and fine tuning ordering process
- Implementation of EMR
Barriers/Successes

BARRIERS...ORDERS vs DOCUMENTATION

– New process for nursing...no longer nurse driven
– New work flow for physicians
– New system that everyone was still learning
– Charting bands were not easy to locate

SUCESSES

– Education flyers passed out for nursing unit “huddles”
– Making the VTE orders a “pre-checked” sub-phase for the physicians with a warning pop-up box if not addressed
– Highlighting the mechanical prophylaxis field in the charting so it is easier to locate for nursing
Keys to Success

– **MAKE THE ORDERS HARD TO MISS**
  
  • We imbedded the VTE prophylaxis orders in every admission order set and “pre-checked” it so a sub-phase will open with a risk assessment and treatment choices

– **HAVE AN SCD MACHINE AVAILABLE FOR EVERY BED**

– **EDUCATION**
  
  • Flyers with documentation tips for nursing
  • Email blasts to the physicians
  • Educational letters to physicians and nursing directors when ordering or documenting prophylaxis was missed

– **ENCOURAGEMENT**
  
  • Every successful month the staff gets congratulated on a job well done
Advice for Others

— INVOLVE THE END USERS
  • We worked closely with nurses and physicians to find out what didn’t flow well and made those changes

— CONCURRENT REVIEW/DAILY VTE AUDITS
  • This worked well for us in the past and we recently re-implemented a concurrent review process for a more timely capture of missing orders or documentation
Next Steps

- With the implementation of eCQM, our screening tool and ordering process for physicians will be even more streamlined.
- GetUP Campaign and progressive mobility
- Monitor our new concurrent review process for implementation in both hospitals.

QUESTIONS?
Contact: Kim Kinsey, RN
kkinsey@centflhealth.org
OPEN DISCUSSION

All
BRING IT HOME

Lisandra Cuadrado, Program Manager | HRET
Link to VTE Change Package:  
http://www.hret-hiin.org/resources/display/venous-thromboembolism-change-package

For more resources on VTE prevention, see  http://www.hret-hiin.org/resources?topic=venous-thromboembolism-vte
Link to VTE Top 10 Checklist:
• Join the LISTSERV®
  – Ask questions
  – Share best practices, tools and resources
  – Learn from subject matter experts
  – Receive follow up from this event and notice of future events

Sign up at http://www.hret-hiin.org/engage/listserv.shtml
Find more information on our website: www.hret-hiin.org

Questions or Comments: HIIN@aha.org