Venous Thromboembolism (VTE) Measure Set

Kathy Wonderly RN, MSEd, CPHQ
Consultant
Developed: June, 2012
Most recent update: December 2014
Major philosophy change

- The Center for Medicare and Medicaid (CMS) is moving away from collecting data on the process of care and focusing more on the outcomes of the care provided. Starting in January 2015, CMS will have five indicators required and one may be voluntarily submitted if your facility wished.

- Depending on the reporting option that your facility chooses, all 6 measures may be required for The Joint Commission’s Accreditation.
Objectives

- To identify the value of starting VTE prophylaxis on the day of or the first day after admission or surgery end date.

- To list the 3 of the 4 elements included on the written warfarin discharge instructions.
Prevention is the Goal

- To prevent such complications, the best approach is to assess each patient for VTE risk and administer primary prophylaxis to reduce the chance for developing either a DVT or PE.
Introduction

- Hospitalized patients at high risk for VTE may develop asymptomatic deep vein thrombosis (DVT) or pulmonary embolism which may cause an unexpected death before the diagnosis is even suspected.

- As with the other measure sets, patients ordered “Comfort Measures only” are excluded from these requirements.
The Desired Patient Outcome

- It is estimated that there are more than 600,000 to 1 million patients who suffer a VTE annually and approximately 50% of these are health care acquired.
- The goal of the CMS Partnership for Patients program is to reduce the occurrence of these HA events by 40%.
- To reach this goal every hospital must have a strong VTE risk assessment and prophylaxis program.
Timeframe for prophylaxis

- After the risk assessment for VTE has been completed and the patient is found to be at risk, it is expected that the VTE prophylaxis should be started by the first day after admission.
The Science of Prevention

- Thromboprophylaxis provides opportunities for improved patient outcomes and reduces the hospital costs.
- Clinical trials have found that concerns regarding the complications from prophylactic anticoagulation especially bleeding are unfounded.
What are the approved prophylactic therapies?

Table 2.1 VTE Prophylaxis Inclusion Table

<table>
<thead>
<tr>
<th>VTE Prophylaxis</th>
<th>Inclusion/Synonyms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coumadin/Warfarin</strong></td>
<td>Coumadin, Jantoven, Warfarin, Warfarin Sodium</td>
</tr>
<tr>
<td><strong>Graduated Compression Stockings (GCS)</strong> - Knee or thigh high</td>
<td>Anti-Embolism stockings, Anti-thrombosis stockings, Elastic support hose, Graduated compression elastic stockings, Surgical hose, White hose, Thrombosis stockings</td>
</tr>
<tr>
<td><strong>Factor Xa Inhibitor</strong></td>
<td>Arixtra, Fondaparinux sodium</td>
</tr>
<tr>
<td><strong>Oral Factor Xa Inhibitor</strong>¹</td>
<td>Apixaban, Eliquis, Rivaroxaban, Xarelto (knee and hip surgery only)</td>
</tr>
<tr>
<td>VTE Prophylaxis</td>
<td>Inclusion/Synonyms</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
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<tr>
<td><strong>Low Dose Unfractionated Heparin (LDUH)</strong></td>
<td>HEP</td>
</tr>
<tr>
<td>- Include only Heparin given by the subcutaneous (SQ, Subcu, SC, SubQ) route</td>
<td>Heparin</td>
</tr>
<tr>
<td></td>
<td>Heparin Na</td>
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<td></td>
<td>Heparin Sod</td>
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<tr>
<td></td>
<td>Heparin Sodium</td>
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<td></td>
<td>Heparin Sodium Inj.</td>
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<tr>
<td></td>
<td>Heparin Sodium Inj. Pork</td>
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<tr>
<td></td>
<td>Heparin Subcu/SQ/SC/SubQ</td>
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<tr>
<td><strong>Low Molecular Weight Heparin (LMWH)</strong></td>
<td>Dalteparin</td>
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<td></td>
<td>Enoxaparin</td>
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<td></td>
<td>Fragmin</td>
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<td></td>
<td>Innohep</td>
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<tr>
<td></td>
<td>Lovenox</td>
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<td></td>
<td>Tinzaparin</td>
</tr>
<tr>
<td><strong>Intermittent Pneumatic Compression Device (IPC)</strong></td>
<td>AE pumps (anti-embolic pumps)-calf/thigh</td>
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<tr>
<td></td>
<td>DVT boots-calf/thigh</td>
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<tr>
<td></td>
<td>EPC cuffs/stockings-External pneumatic compression-calf/thigh</td>
</tr>
<tr>
<td></td>
<td>Intermittent pneumatic compression stockings</td>
</tr>
<tr>
<td></td>
<td>Intermittent compression device (ICD)</td>
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<tr>
<td></td>
<td>Leg pumpers</td>
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<tr>
<td></td>
<td>Pneumatic intermittent impulse compression device</td>
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<td></td>
<td>Rapid inflation asymmetrical compression (RIAC) devices</td>
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<td></td>
<td>Sequential compression device</td>
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<tr>
<td></td>
<td>Sequential pneumatic hose</td>
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<tr>
<td></td>
<td>Thrombus pumps-calf/thigh</td>
</tr>
<tr>
<td>VTE Prophylaxis</td>
<td>Inclusion/ Synonym</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Venous Foot Pump (VFP)   | AE pumps-foot only  
Foot pump  
Plantar venous plexus pump-foot only  
SC boots-foot only  
SCD boots-foot only  
Venous foot pump          |
| Aspirin                  | Acetylsalicylic Acid (ASA)  
Aspirin/caffeine  
Buffered aspirin  
Coated aspirin  
Enteric coated aspirin  
Tri-buffered aspirin     |
Note for the preceding table

- This table is not meant to be an inclusive list of all available prophylaxis; rather it represents current information available at the time the specification manual was published.

ICU Patients

- The majority of patients admitted or transferred to an intensive or critical care unit have multiple major risk factors for developing a VTE.
- These include advanced age, serious medical illness, recent surgical procedures or trauma.
It is expected that all patients admitted to a ICU/CCU will be assessed for the risk of VTE and appropriate thromboprophylaxis will be started.

The VTE prophylaxis should be started the day of or day after initial admission or transfer to ICU.

If the prophylaxis is not started, there must be documentation of the reasons why VTE prophylaxis was not ordered.
Exceptions for the VTE measure set

- Surgical patients whose surgical end date is the first day after admission. These fall into the SCIP VTE measure and should have prophylaxis started from 24 hours prior to surgery to 24 hours after the anesthesia end time.
- Patients with documentation by the practitioner of reasons why prophylaxis was ordered.
- Patients less than 18 years of age
- Patients with *Comfort Measures Only* documented on the day of or the first day after admission.
What anticoagulation therapy is used if the patient has a VTE?

- For patients who have a confirmed acute VTE, parenteral anticoagulation using unfractionated heparin, is the first line of treatment as it has rapid action.
Monitoring patients on unfractionated heparin

- Heparin is often used to treat patients who develop a VTE. Either sub-therapeutic or supra-therapeutic heparin levels are commonly involved in adverse drug events such as further thromboembolism development or bleeding.
- To reduce the incidence of such events the patient must achieve but not exceed a therapeutic blood level within 24-48 hours.
- This monitoring must continue throughout treatment with heparin to maintain a safe blood level.
Monitoring patients on Unfractionated Heparin

- Unfractionated Heparin is a weight-based dosage medication that is adjusted according to the results of the aPTT laboratory test.

- Heparin-induced thrombocytopenia (HIT) is a complication that can occur. This is an unexplained fall in platelet count (more than a 50% drop from the baseline). This complication usually occurs 5-10 days after starting the heparin so platelet count monitoring is recommended.
Overlap therapy

• This should be given with overlap warfarin therapy in preparation for discharge. Warfarin can be initiated on the first day of treatment after the first dose of parenteral anticoagulation has been given.

• It is recommended that the overlap therapy be given for at least 5 days to maintain adequate anticoagulation while the slower acting Coumadin (warfarin) takes effect.
VTE Discharge Instructions

• Anticoagulation therapy poses risks to patients and often leads to adverse drug events. To reduce the chance of adverse events, patients and as relevant their caregivers must receive written discharge instructions or other educational material about Coumadin (warfarin) use.

• These instructions must include the following items.
Compliance Issues

• It is important that the patient takes his or her Coumadin at the same time each day.

• If a dose is missed it should be taken as soon as the patient remembers—unless it’s almost time for the next dose. In that case, skip the missed dose.

• The patient must not take a double dose.
Dietary Advice

• The patient should keep their daily diet similar as many foods contain vitamin K which helps with blood clotting. Eating foods that contain vitamin K can affect the way Coumadin works.

• The foods containing vitamin K don’t need to be avoided. Just keep the amount of them eaten about the same day to day.

• If the patient changes diets for any reason, such as due to illness or to lose weight, he or she should tell their doctor.
Vitamin K foods

- Examples of foods high in vitamin K are asparagus, avocado, broccoli, and cabbage. Oils, such as soybean, canola, and olive oils, are also high in vitamin K.
Other Dietary Guidelines

- Other food products can affect the way Coumadin works in the body:

  Food products that may affect blood clotting include cranberries and cranberry juice, fish oil supplements, garlic, ginger, licorice, and turmeric.

- Herbs used in herbal teas or supplements can also affect blood clotting. Keep the amount of herbal teas and supplements use steady.

- Alcohol can increase the effect of Coumadin in the body.
Follow-up monitoring

- The patient should keep appointments for blood (protime/INR) tests as often as directed. Diet and medications can affect the protime/INR level.
- The patient should not take any other medications without checking with the doctor first. This includes over-the-counter medications, herbal remedies, and supplements.
- They need to tell all doctors, dentists, and other healthcare providers that they take Coumadin.
Potential for adverse drug reaction and interactions

- The patient should be instructed to call the doctor immediately if the following occur:
  - Trouble breathing
  - Swollen lips, tongue, throat, or face
  - Hives or painful rash
  - Black, bloody, or tarry stools
  - Blood in their urine
  - Vomiting or coughing up blood
  - Bleeding gums or sores in their mouth
  - Unusual bleeding or bruising, including heavy menstrual periods
Potential adverse events cont.

- Yellowing of the skin or eyes (jaundice)
- Dizziness
- Severe headache
- Purple discoloration of the toes or fingers
- Sudden leg or foot pain
- Chest pain
- Confusion
- Slurred speech
- Weakness on one side of the body
Incidence of potentially preventable VTE

- The final measure in the VTE set is the identification of those patients who developed confirmed VTE during hospitalization (not present on admission).
- It is imperative that every assessment finding be documented on admission (POA) so only those VTE occurring after hospitalization are counted.
1. The first step in preventing a patient from developing a VTE is completing a thorough risk assessment on admission.

A. True
B. False
Test your knowledge

2. For patients that are at risk for VTE the prophylaxis should be started by the ___________ day after admission.

A. first
B. second
C. third
Test your knowledge

3. Foods that are high in Vitamin _____ can affect blood clotting time.

1. A
2. B
3. D
4. K
References

- IHI Partnership for Patients HEN. 2012
  http://chmccook.kramesonline.com/3,S,86250
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