

# Partnership for Patients



ALASKA STATE HOSPITAL &  
NURSING HOME ASSOCIATION



Washington State  
Hospital Association

## Safety Action Bundle – Hospital-Associated Venous Thromboembolism (HA-VTE)

### Background

- VTE is estimated to affect 300,000 to 600,000 people annually in the U.S or 1-2 per 1,000 of the population. The incidence of VTE varies with age, race and gender, with a significant increase of incidence in people over 80 years old.
- VTE is a significant cause of morbidity and mortality, leading to at least 100,000 deaths per year.
- VTE's are often associated with triggering events, such as hospitalization, surgery, trauma and immobility. Although surgery is a major component of the increased risk for hospitalized patients, it is important to note that acutely ill medical patients have a tenfold increased risk for VTE.
- The economic burden associated with VTE is estimated to cost \$8,000 to \$16,000 per patient annually, which equates to a total annual cost of \$2 to \$10 billion.

### Aims

To reduce the incidence of post-operative VTE by 20% by September 23, 2017

### Measures

*Outcome:* [PSI#12: Postoperative Pulmonary Embolism or Deep Vein Thrombosis per AHRQ specifications<sup>i</sup>](#)

*Process:* Adherence to HA-VTE Safety Action Bundle<sup>ii</sup>

*Submit:* Washington State Hospital Association Quality Benchmark System

### Core Strategies

Strategy	Action Item
Person and Family Engagement <sup>iii</sup>	<ul style="list-style-type: none"><li>□ Encourage and support patient and family participation in care planning and decision making related to VTE prophylaxis interventions<sup>iv</sup>.</li><li>□ Before initiating VTE prophylaxis, provide patients and families with written and verbal information on the importance of VTE prophylaxis and the potential consequences of non-adherence to protocols<sup>v</sup>.</li></ul>

Strategy	Action Item
Culture	<ul style="list-style-type: none"> <li>□ Promote a blame-free environment where individuals can report errors or near misses without fear of reprimand or punishment<sup>vi</sup>.</li> <li>□ Encourage collaboration across ranks and disciplines to seek solutions to barriers in providing VTE prophylaxis.</li> </ul>
Leadership <sup>vii, viii</sup>	<ul style="list-style-type: none"> <li>□ Select <b>champions</b> to lead the VTE initiative: <ul style="list-style-type: none"> <li>○ Executive/Senior leadership</li> <li>○ Physician</li> <li>○ Nursing</li> <li>○ Pharmacy</li> <li>○ Clinical decision support</li> </ul> </li> <li>□ Align VTE quality improvement goals with the strategic goals of the organization so that stakeholders understand the purpose of this specific effort.</li> <li>□ Utilize your facility’s Quality Improvement Framework.</li> </ul>
Implement a Standardized VTE Prevention Protocol <sup>ix</sup>	<ul style="list-style-type: none"> <li>□ Develop a multi-disciplinary team that involves front-line staff and providers in the development of the VTE prevention protocol.</li> <li>□ A VTE prevention protocol is more than the implementation of VTE order sets. Relying on order sets alone will not achieve desired levels of risk-appropriate prophylaxis.</li> <li>□ Develop a VTE prevention protocol that has the following characteristics: <ul style="list-style-type: none"> <li>○ Includes a standardized assessment of VTE and bleeding risk that is tied to recommendations of VTE prophylaxis for each level of risk</li> <li>○ Reliably detects all patients at risk for developing a VTE</li> <li>○ Provides decision support regarding combination mechanical and pharmacological prophylaxis</li> <li>○ Is simple to use for the end-user and does not require complex calculations</li> <li>○ Minimizes over-prophylaxis for low risk patients</li> <li>○ Decreases HA-VTE without any increase in bleeding</li> </ul> </li> <li>□ Choose a model to assess VTE and bleeding risk<sup>x</sup>: <ul style="list-style-type: none"> <li>○ A Qualitative or Quantitative risk assessment model is the preferred tool over Prompts and Opt Out models.*</li> <li>○ <b>Qualitative risk assessment models:</b> <ul style="list-style-type: none"> <li>▪ Group patients to categories of risk that are linked to prophylaxis options for each group.</li> <li>▪ Examples: <ul style="list-style-type: none"> <li>✓ <a href="#">“Classic” 3 Bucket Model<sup>xi</sup></a></li> <li>✓ <a href="#">NHS/NICE Model<sup>xii</sup></a></li> <li>✓ <a href="#">Australia/New Zealand Working Party<sup>xiii</sup></a></li> <li>✓ <a href="#">Italian Model (Scaglione)<sup>xiv</sup></a></li> </ul> </li> </ul> </li> </ul> </li> </ul>

<p>Implement a Standardized VTE Prevention Protocol<sup>xv</sup> (continued)</p>	<ul style="list-style-type: none"> <li>▪ <b>Strengths:</b> <ul style="list-style-type: none"> <li>✓ Relatively easy to use</li> <li>✓ Have demonstrated success in the literature</li> <li>✓ Most major international guidelines incorporate qualitative models</li> </ul> </li> <li>▪ <b>Limitations:</b></li> <li>○ Some qualitative models may set the bar too low for prophylaxis.</li> <li>○ <b>Quantitative risk assessment models:</b> <ul style="list-style-type: none"> <li>▪ Sum a cumulative point score for multiple risk factors.</li> <li>▪ Examples: <ul style="list-style-type: none"> <li>✓ <a href="#">Caprini model</a><sup>xvi</sup></li> <li>✓ <a href="#">Brigham and Women’s Hospital (Kucher)</a><sup>xvii</sup></li> <li>✓ <a href="#">Padua model</a><sup>xviii</sup></li> <li>✓ <a href="#">IMPROVE</a><sup>xix</sup></li> </ul> </li> <li>▪ <b>Strengths:</b> <ul style="list-style-type: none"> <li>✓ Endorsed by the Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (<a href="#">AT9</a><sup>xx</sup>)</li> <li>✓ The risk factors are weighted to reflect the variable impact of each risk factor</li> </ul> </li> <li>▪ <b>Limitations:</b> <ul style="list-style-type: none"> <li>✓ The complexity of scoring systems varies</li> <li>✓ Can be difficult to implement and use</li> <li>✓ Effectiveness in reducing HA-VTE has not been demonstrated</li> </ul> </li> </ul> </li> <li>○ <b>*Examples of the non-preferred models:</b> <ul style="list-style-type: none"> <li>▪ A Prompt risk assessment model: <ul style="list-style-type: none"> <li>✓ Prompts the provider to consider prophylaxis and does not provide clinical decision support.</li> <li>✓ <b><u>This method is well documented to result in under-prophylaxis.</u></b></li> <li>✓ <a href="#">Example of a Prompt Risk Assessment Mode</a><sup>xxi</sup></li> </ul> </li> <li>▪ Opt Out risk assessment models: <ul style="list-style-type: none"> <li>✓ Automatically default all patients with orders for VTE prophylaxis, which the provider can opt out if there is a contraindication.</li> <li>✓ <b><u>This method can easily result in over-prophylaxis.</u></b></li> <li>✓ <a href="#">Example of an Opt Out Risk Assessment Mode</a><sup>xxii</sup></li> </ul> </li> </ul> </li> </ul>
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Strategy	Action Item
Implement a Standardized VTE Prevention Protocol <sup>xxiii</sup> (continued)	<ul style="list-style-type: none"> <li>□ Auto-populate data elements into the risk assessment from elsewhere in the electronic medical record. (Ex: age, pertinent labs and meds)</li> <li>□ Link VTE and bleeding risk assessment to appropriate prophylaxis options. The ordering provider should not be expected to remember the risk assessment score to order the correct prophylaxis.</li> <li>□ Build VTE risk assessment and prophylaxis orders into established order sets.</li> </ul> <p>Develop a system that promotes redundant and dynamic re-evaluation of all patient’s VTE risk throughout their admission.</p>
Mobility Protocols	<ul style="list-style-type: none"> <li>□ Implement a plan for promoting patient mobility on admission. The plan should have explicit steps that can be individualized to the patient.</li> <li>□ Trigger reassessment of VTE risk when patients do not meet ambulation goals.</li> </ul>
Discharge Instructions <sup>xxiv, xxv, xxvi</sup>	<ul style="list-style-type: none"> <li>□ Involve the patient and family members in discharge planning to ensure they understand the importance of post-discharge VTE prophylaxis interventions, if prescribed.</li> <li>□ Give clearly written and well-explained VTE discharge instructions to patients and families and validate understanding.</li> <li>□ Educate patients and families to early signs and symptoms of VTE and instructions on contacting their provider.</li> <li>□ Use ‘teach back’ to demonstrate that patients and families have thorough understanding of instructions<sup>xxvii, xxviii</sup>.</li> </ul>
Performance and Variation <sup>xxix</sup>	<ul style="list-style-type: none"> <li>□ Utilize a well-developed and effective clinical decision support system that involves getting the right information, to the right people, in the right format, through the right channels at the right points in workflow<sup>xxx</sup>.</li> <li>□ Design reliability into VTE prevention processes<sup>xxxi</sup>.</li> <li>□ Develop a system of measurement that incorporates outcome, process and balancing measures to achieve goals<sup>xxxii</sup>.</li> <li>□ Automate the collection of VTE QI measurement elements.</li> <li>□ Hold physician and nursing staff accountable to established VTE initiatives. Identify outliers and provide customized training to target gaps in knowledge.</li> </ul>

## Moving Towards Zero

Strategy	Action Item
Take the Above Measures to the Next Level	<ul style="list-style-type: none"> <li data-bbox="480 327 1458 401">☐ Incorporate clinical pharmacists in daily patient rounds to ensure appropriate VTE prophylaxis has been instituted.</li> <li data-bbox="480 407 1458 516">☐ Leverage IT to support caregivers in identifying gaps in care and trigger real-time action when a patient that is at risk for VTE is not receiving appropriate prophylaxis.</li> <li data-bbox="480 522 1458 596">☐ Report out VTE performance metrics to front-line staff, hospital, physician, nursing and pharmacy leadership, as well as board members.</li> <li data-bbox="480 602 1458 632">☐ Promote transparency of VTE performance with the public.</li> </ul>

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## Footnotes

<sup>i</sup> [https://qualityindicators.ahrq.gov/Downloads/Modules/PSI/V60-ICD09/TechSpecs/PSI\\_12\\_Periooperative\\_Pulmonary\\_Embolism\\_or\\_Deep\\_Vein\\_Thrombosis\\_Rate.pdf](https://qualityindicators.ahrq.gov/Downloads/Modules/PSI/V60-ICD09/TechSpecs/PSI_12_Periooperative_Pulmonary_Embolism_or_Deep_Vein_Thrombosis_Rate.pdf)

<sup>ii</sup> *Venous Thromboembolism Prevention. (2017). Hospitalmedicine.org. Retrieved 28 March 2017, from [http://www.hospitalmedicine.org/Web/Quality\\_Innovation/Implementation\\_Toolkits/Venous\\_Thromboembolism/Web/Quality\\_Innovation/Implementation\\_Toolkit/Venous/Overview.aspx?hkey=bf71b6a6-0dab-4962-aa9a-226d42366dde](http://www.hospitalmedicine.org/Web/Quality_Innovation/Implementation_Toolkits/Venous_Thromboembolism/Web/Quality_Innovation/Implementation_Toolkit/Venous/Overview.aspx?hkey=bf71b6a6-0dab-4962-aa9a-226d42366dde)*

<sup>iii</sup> *Patient and Family-Centered Care Organizational Self-Assessment Tool. (2017). Ihi.org. Retrieved 28 March 2017, from <http://www.ihl.org/resources/Pages/Tools/PatientFamilyCenteredCareOrganizationalSelfAssessmentTool.aspx>*

<sup>iv</sup> *Blood Clot Treatment and Recovery. (2017). Stopthecлот.org. Retrieved 28 March 2017, from [https://www.stopthecлот.org/wp-content/uploads/2016/09/Blood-Clot-Tx-and-Recovery-Brochure\\_Final.pdf](https://www.stopthecлот.org/wp-content/uploads/2016/09/Blood-Clot-Tx-and-Recovery-Brochure_Final.pdf)*

<sup>v</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4816559/>

<sup>vi</sup> <https://innovations.ahrq.gov/profiles/multifaceted-program-increases-reporting-potential-errors-leads-action-plans-enhance-safety>

<sup>vii</sup> <http://www.ihl.org/resources/Pages/Tools/IHIFrameworkforLeadershipforImprovement.aspx>

<sup>viii</sup> <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixa.html>

<sup>ix</sup> <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/vtguide5.html>

<sup>x</sup> <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb.html>

<sup>xi</sup> <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb.html#b6>

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- xii <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb.html#b4>
- xiii <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb.html#b8>
- xiv <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb.html#b9>
- xv <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/vtguide5.html>
- xvi <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb2.html#b10>
- xvii <https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/vtguide/appendixb2.html#b11>
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