

# NATIONAL QUALITY FORUM

## Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the [submitting standards web page](#).

<b>NQF #:</b> 0376	<b>NQF Project:</b> Patient Safety Measures-Complications Project
(for Endorsement Maintenance Review)	
<b>Original Endorsement Date:</b> May 15, 2008 <b>Most Recent Endorsement Date:</b> May 15, 2008 <b>Last Updated Date:</b> Dec 13, 2012	
<b>BRIEF MEASURE INFORMATION</b>	
<b>De.1 Measure Title:</b> Incidence of Potentially Preventable Venous Thromboembolism	
<b>Co.1.1 Measure Steward:</b> The Joint Commission	
<b>De.2 Brief Description of Measure:</b> This measure assesses the number of patients with confirmed venous thromboembolism (VTE) during hospitalization (not present at admission) who did not receive VTE prophylaxis between hospital admission and the day before the VTE diagnostic testing order date. This measure is part of a set of six prevention and treatment measures that address VTE (VTE-1: VTE Prophylaxis, VTE-2: ICU VTE Prophylaxis, VTE-3: VTE Patients with Anticoagulation Overlap Therapy, VTE-4: VTE Patients Receiving UFH with Dosages/Platelet Count Monitoring by Protocol, and VTE-5: VTE Warfarin Therapy Discharge Instructions).	
<b>2a1.1 Numerator Statement:</b> Patients who received no VTE prophylaxis prior to the VTE diagnostic test order date	
<b>2a1.4 Denominator Statement:</b> Patients who developed confirmed VTE during hospitalization. The target population includes patients discharged with an ICD-9-CM Secondary Diagnosis Codes for VTE as defined in Table 7.03 or Table 7.04.	
<b>2a1.8 Denominator Exclusions:</b> . Patients less than 18 years of age <ul style="list-style-type: none"> <li>• Patients who have a length of stay greater than 120 days</li> <li>• Patients with Comfort Measures Only documented</li> <li>• Patients enrolled in clinical trials</li> <li>• Patients with ICD-9-CM Principal Diagnosis Code of VTE as defined in Appendix A, Table 7.03 or 7.04</li> <li>• Patients with VTE Present at Admission</li> <li>• Patients with reasons for not administering mechanical and pharmacologic prophylaxis</li> <li>• Patients without VTE confirmed by diagnostic testing</li> </ul>	
<b>1.1 Measure Type:</b> Outcome <b>2a1. 25-26 Data Source:</b> Claims, Paper Records <b>2a1.33 Level of Analysis:</b> Facility, Other	
<b>1.2-1.4 Is this measure paired with another measure?</b> No	
<b>De.3 If included in a composite, please identify the composite measure (title and NQF number if endorsed):</b> Not Applicable	

### STAFF NOTES (issues or questions regarding any criteria)

<b>Comments on Conditions for Consideration:</b>
<b>Is the measure untested? Yes <input checked="" type="radio"/> No <input checked="" type="radio"/> If untested, explain how it meets criteria for consideration for time-limited endorsement:</b>
<b>1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (check De.5):</b> <b>5. Similar/related <a href="#">endorsed</a> or submitted measures (check 5.1):</b> <b>Other Criteria:</b>
<b>Staff Reviewer Name(s):</b>

<b>1. IMPACT, OPPORTUNITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT</b>
Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See <a href="#">guidance on evidence</a> . <b>Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (<a href="#">evaluation criteria</a>)</b>
<b>1a. High Impact: H <input checked="" type="radio"/> M <input checked="" type="radio"/> L <input checked="" type="radio"/> I <input checked="" type="radio"/> NA <input checked="" type="radio"/></b> (The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.)
<b>De.4 Subject/Topic Areas (Check all the areas that apply):</b> <b>De.5 Non-Condition Specific (Check all the areas that apply):</b> <a href="#">Primary Prevention</a>
<b>1a.1 Demonstrated High Impact Aspect of Healthcare:</b> <a href="#">A leading cause of morbidity/mortality, Patient/societal consequences of poor quality</a>
<b>1a.2 If "Other," please describe:</b>
<b>1a.3 Summary of Evidence of High Impact (Provide epidemiologic or resource use data):</b> The concept of "failure to prevent" has generated interest in national health policy organizations to identify evidence-based practice that will improve patient safety in the hospital setting. In spite of formal guidelines, pulmonary embolism is the most common preventable cause of death among hospitalized patients causing or contributing to 5% to 10% of all in-hospital deaths. A study at a large teaching hospital found that potentially preventable cases of VTE represented two thirds of all VTE cases where prophylaxis was indicated with 47.7% due to failure to give any prophylaxis, 22.7% because of inadequate duration or 20% due to incorrect type of prophylaxis. Almost one-half of all VTE occurring in the community is related to recent hospitalization, either for major surgery or for acute medical illness. It has been estimated that approximately 1 out of 20 hospitalized medical patients will suffer a fatal PE if they have not received appropriate thrombosis prophylaxis. Pulmonary embolism (PE) is the third most common cause of hospital-related death in the US. Failure to prevent VTE can result in delayed hospital discharge or readmission, increased risk for long-term morbidity from post-thrombotic syndrome, recurrent thrombosis in the future, and mortality from PE.
<b>1a.4 Citations for Evidence of High Impact cited in 1a.3:</b> <a href="#">1Baglin TP, White K, Charles A. Fatal pulmonary embolism in hospitalized medical patients. J Clin Pathol. 1997 Jul;50(7):609-10.</a> <a href="#">2Arnold DM, Kahn SR, Shrier I. Missed opportunities for prevention of venous thromboembolism: an evaluation of the use of thromboprophylaxis guidelines. Chest. 2001 Dec;120(6):1964-71.</a> <a href="#">3Heit JA, O'Fallon WM, Petterson TM et al. Relative impact of risk factors for deep vein thrombosis and pulmonary embolism: a population-based study. Arch Intern Med. 2002 Jun 10;162(11):1245-8.</a> <a href="#">6 Heit JA, Cohen AT, Anderson FA Jr, et al., Estimated annual number of incident and recurrent, non-fatal and fatal venous thromboembolism (VTE) events in the US, Blood (ASH Annual Meeting Abstracts),</a>

2005;106:Abstract 910.

**1b. Opportunity for Improvement: H● M● L● I●**

(There is a demonstrated performance gap - variability or overall less than optimal performance)

**1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:**

It is anticipated that as a result of this measure, hospitals will focus quality improvement efforts on preventing VTE which will benefit patients and the community. It is also well known that despite the publication and widespread dissemination of multiple guidelines for the prevention and management of VTE, clinical practices in hospitals have not changed at an acceptable pace and multiple studies that have included the audit of hospital records of medical and surgical patients continue to show underuse of VTE prophylaxis. Underuse of prophylaxis or inappropriate treatment can be associated with well-known complications of VTE.

**1b.2 Summary of Data Demonstrating Performance Gap (Variation or overall less than optimal performance across providers): [For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.]**

About two-thirds of all VTE are related to hospitalization with 25 percent of cases presenting as sudden death from PE.<sup>7, 8</sup> Even though pharmacological and mechanical interventions have been shown to be effective, only one-third of all patients at risk for VTE actually receive any prophylaxis.<sup>9</sup> There are numerous studies that cite that VTE prophylaxis is underutilized; there is strong scientific evidence that prophylaxis reduces the risk for DVT in asymptomatic patients and the risk for PE in surgical patients {Grade 1 - strong scientific evidence (for the conclusions)} and reduces mortality in conjunction with surgery (Grade 2 – moderate scientific evidence).<sup>10</sup>

Based on 5 quarters of data reported to The Joint Commission, VTE -6 has an aggregate performance rate of 13.2%, with 0.0% ideal for incidence of potentially preventable VTE.

**1b.3 Citations for Data on Performance Gap: [For Maintenance – Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included]**

7 Hyers TM. Management of venous thromboembolism. Arch Intern Med. 2003;163:759-768.

8 Gillies TE, Ruckley CV, Nixon SJ. Still missing the boat with fatal pulmonary embolism. Br J Surg. 1996 Oct;83(10):1394.

9 Goldhaber SZ, Dunn K, Mac Dougall RC. New onset of venous thromboembolism among hospitalized patients at Brigham and Women's Hospital is caused more often by prophylaxis failure than by withholding treatment. Chest 2000;118:1680-4.

10 Technology Assessment Reports. INTL. J of technology assessment in health care. 2003 19:3;573-584.

**1b.4 Summary of Data on Disparities by Population Group: [For Maintenance –Descriptive statistics for performance results for this measure by population group]**

No disparities have been identified relating directly to this measure.

**1b.5 Citations for Data on Disparities Cited in 1b.4: [For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included]**

None

**1c. Evidence (Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.)**

**Is the measure focus a health outcome? Yes● No●** If not a health outcome, rate the body of evidence.

**Quantity: H● M● L● I● Quality: H● M● L● I● Consistency: H● M● L● I●**

Quantit y	Qualit y	Consisten cy	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes●
L	M-H	M	Yes● IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No●
M-H	L	M-H	Yes● IF potential benefits to patients clearly outweigh potential harms: otherwise No●
L-M-H	L-M-H	L	No ●
Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service			Does the measure pass subcriterion1c? Yes● IF rationale supports relationship
<p><b>1c.1 Structure-Process-Outcome Relationship</b> (<i>Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome</i>):</p> <p>The focus of the measure is to evaluate the number of patients that developed VTE during hospitalization who did not receive VTE prophylaxis. The process is administration of appropriate VTE prophylaxis &gt;&gt;The intermediate outcome is: no development of VTE&gt;&gt;the intermediate clinical outcome is a decrease in VTE related morbidity/mortality &gt;&gt;leading to improved community health.</p> <p><b>1c.2-3 Type of Evidence</b> (<i>Check all that apply</i>):</p> <p>Clinical Practice Guideline, Other, Systematic review of body of evidence (other than within guideline development)</p> <p>NQF Safe Practice</p> <p><b>1c.4 Directness of Evidence to the Specified Measure</b> (<i>State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population</i>):</p> <p>The central topic of the measure is to identify incidence of potentially preventable venous thromboembolism. The majority of patients admitted today to inpatient medical or surgical units are at risk for VTE events (fully ambulatory and the “walking well” patients don’t get admitted to inpatient beds often). The performance measure requires the provision of VTE prophylaxis to patients who are hospitalized (age 18 or older) or documentation at the time of admission of some form of risk assessment showing that the patient does not need thromboprophylaxis. The target population for the performance measure is consistent with body of evidence supporting the need for VTE prophylaxis identification in hospitalized patients. The body of evidence continues to address the incidence of VTE occurrence due to inadequate/nonexistent VTE prophylaxis.</p> <p><b>1c.5 Quantity of Studies in the Body of Evidence</b> (<i>Total number of studies, not articles</i>): There are literally hundreds of well designed, prospective, randomized clinical trials published over the past 35 years that have clearly demonstrated the efficacy of both pharmacologic and mechanical forms of VTE prophylaxis to prevent VTE events (including asymptomatic, symptomatic, and deaths from VTE). In 2008, the American College of Chest Physicians (ACCP) summarized more than 700 articles, most of which represented published clinical trials on prevention of VTE events. Similarly, there are dozens of observation studies that have evaluated use of VTE prophylaxis in hospitalized patients (usually through medical record audit) which show consistent underuse of prophylaxis.</p> <p><b>1c.6 Quality of Body of Evidence</b> (<i>Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence</i></p>			

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable  
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*intervals due to few patients or events*): The quality of evidence supporting the use of VTE prophylaxis in hospitalized patients is very high with studies published that have involved virtually every population of patients in the acute care setting. As noted by the ACCP, a vast number of randomized clinical trials provide irrefutable evidence that thromboprophylaxis reduces VTE events, and there are studies that have also shown that fatal PE is prevented by thromboprophylaxis. Routine use of thromboprophylaxis reduces adverse patient outcomes while at the same time decreasing overall costs. With respect to complications of thromboprophylaxis, abundant data from meta-analyses and blinded, randomized clinical trials have demonstrated little or no increase in the rates of clinically important bleeding with prophylactic doses of pharmacologic VTE prophylaxis.

**1c.7 Consistency of Results across Studies** (*Summarize the consistency of the magnitude and direction of the effect*): Study results were consistent in the recommendation for timely identification of the at risk population for VTE, and support of the importance of prophylaxis.

**1c.8 Net Benefit** (*Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms*):

The benefit of this measure is to identify those patients who did not receive prophylaxis but subsequently developed VTE. By analyzing these cases, hospitals can determine opportunities for improvement in their VTE risk assessment processes so as to be able to more appropriately provide effective VTE prophylaxis.

**1c.9 Grading of Strength/Quality of the Body of Evidence.** Has the body of evidence been graded? **Yes**

**1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:** American College of Chest Physicians

**1c.11 System Used for Grading the Body of Evidence:** GRADE

**1c.12 If other, identify and describe the grading scale with definitions:**

**1c.13 Grade Assigned to the Body of Evidence:** 1A

**1c.14 Summary of Controversy/Contradictory Evidence:** Controversy exists as to the use of anticoagulation products in head injury patients, but focus of those studies is related to timing of initiation of therapy, and all studies support the use of prophylaxis. There is no controversy in identifying possible preventable venous thromboembolism.

**1c.15 Citations for Evidence other than Guidelines(Guidelines addressed below):**

1. Baglin TP, White K, Charles A. Fatal pulmonary embolism in hospitalized medical patients. J Clin Pathol. 1997 Jul;50(7):609-10.
2. Arnold DM, Kahn SR, Shrier I. Missed opportunities for prevention of venous thromboembolism: an evaluation of the use of thromboprophylaxis guidelines. Chest. 2001 Dec;120(6):1964-71.
3. Heit JA, O'Fallon WM, Petterson TM et al. Relative impact of risk factors for deep vein thrombosis and pulmonary embolism: a population-based study. Arch Intern Med. 2002 Jun 10;162(11):1245-8.
4. Gillies TE, Ruckley CV, Nixon SJ. Still missing the boat with fatal pulmonary embolism. Br J Surg. 1996 Oct;83(10):1394-5.

**1c.16 Quote verbatim, the specific guideline recommendation** (*Including guideline # and/or page #*): For every general hospital, we recommend that a formal, active strategy that addresses prevention of VTE be developed (Grade 1a). 1.2.1. page 382S (2008).

**1c.17 Clinical Practice Guideline Citation:** Geerts WH, Bergqvist D, Pineo GF, Heit JA, Samama CM, Lassen MR, Colwell CW. Prevention of venous thromboembolism. The Eighth ACCP Conference on antithrombotic and thrombolytic therapy. Chest. 2008; 133:381S-453S.

**1c.18 National Guideline Clearinghouse or other URL:**

<http://www.guideline.gov/content.aspx?id=12956&search=vte>

**1c.19 Grading of Strength of Guideline Recommendation.** Has the recommendation been graded? **Yes**

**1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:** [These guidelines have been endorsed by the American College of Clinical Pharmacy and the American Society of Health-System Pharmacists. Additional information can be obtained from: \[http://chestjournal.chestpubs.org/content/133/6\\\_suppl/b.full\]\(http://chestjournal.chestpubs.org/content/133/6\_suppl/b.full\)](#)

**1c.21 System Used for Grading the Strength of Guideline Recommendation:** **GRADE**

**1c.22 If other, identify and describe the grading scale with definitions:**

**1c.23 Grade Assigned to the Recommendation:** **1A**

**1c.24 Rationale for Using this Guideline Over Others:** [These are evidence-based practice guidelines that incorporate data obtained via a comprehensive literature review of the most recent studies available. They are updated every four years and graded as to strength of evidence and methodological quality of the evidence underlying that recommendation.](#)

**Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?**

**1c.25 Quantity:** **Moderate** **1c.26 Quality:** **Low** **1c.27 Consistency:** **Low**

**1c.28 Attach evidence submission form:**

**1c.29 Attach appendix for supplemental materials:**

**Was the threshold criterion, *Importance to Measure and Report*, met?**

**(1a & 1b must be rated moderate or high and 1c yes) Yes ☐ No ☒**

**Provide rationale based on specific subcriteria:**

**For a new measure if the Committee votes NO, then STOP.**

**For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.**

## 2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **(evaluation criteria)**

Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See [guidance on measure testing](#).

**S.1 Measure Web Page** *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained).* Do you have a web page where current detailed specifications for this measure can be obtained? **Yes**

**S.2 If yes, provide web page URL:**

[http://www.jointcommission.org/specifications\\_manual\\_for\\_national\\_hospital\\_inpatient\\_quality\\_measures/](http://www.jointcommission.org/specifications_manual_for_national_hospital_inpatient_quality_measures/)

**2a. RELIABILITY. Precise Specifications and Reliability Testing:** **H ☒ M ☒ L ☒ I ☒**

**2a1. Precise Measure Specifications.** *(The measure specifications precise and unambiguous.)*

**2a1.1 Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome):*

Patients who received no VTE prophylaxis prior to the VTE diagnostic test order date

**2a1.2 Numerator Time Window** *(The time period in which the target process, condition, event, or outcome is eligible for inclusion):*

Episode of Care

**2a1.3 Numerator Details** *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses):*

One data element is used to calculate the numerator:

VTE Prophylaxis Status - Documentation of VTE prophylaxis (mechanical and/or pharmacologic) administration between the hospital admission date and the day before the VTE diagnostic test order date. Allowable Value (AV): 1 There is documentation that VTE prophylaxis was administered between the day of admission and the day before the VTE diagnostic test order date, 2 There is no documentation that VTE prophylaxis was administered between the day of admission and the day before the VTE diagnostic test order date or unable to determine from medical record documentation, or 3 There is physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist documentation of a reason for not administering mechanical and pharmacological VTE prophylaxis during hospitalization.

**2a1.4 Denominator Statement** *(Brief, narrative description of the target population being measured):*

Patients who developed confirmed VTE during hospitalization. The target population includes patients discharged with an ICD-9-CM Secondary Diagnosis Codes for VTE as defined in Table 7.03 or Table 7.04.

**2a1.5 Target Population Category** *(Check all the populations for which the measure is specified and tested if any):* Adult/Elderly Care, Elderly

**2a1.6 Denominator Time Window** *(The time period in which cases are eligible for inclusion):*

Episode of Care

**2a1.7 Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses):*

Ten data elements are used to calculate the denominator:

1. Admission Date – The month, day and year of admission to acute inpatient care.
2. Birthdate - The month, day and year the patient was born.
3. Clinical Trial - Documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied. Allowable values: Yes or No/UTD
4. Comfort Measures Only - Physician/advanced practice nurse/physician assistant (physician/APN/PA) documentation of comfort measures only. Commonly referred to as “palliative care” in the medical community and “comfort care” by the general public. Palliative care includes attention to the psychological and spiritual needs of the patient and support for the dying patient and the patient’s family. Comfort Measures Only are not equivalent to the following: Do Not Resuscitate (DNR), living will, no code, no heroic measure. Allowable values represent the earliest physician/APN/PA documentation: (AV 1) Day 0 or 1, (AV 2) Day 2 or after, (AV 3) Timing unclear or (AV 4) Not Documented/UTD.
5. Discharge Date – The month day and year the patient was discharged from acute care, left against medical advice or expired during the stay.

6. ICD-9-CM Other Diagnosis Codes - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes associated with the Secondary diagnoses for this hospitalization.
7. ICD-9-CM Principal Diagnosis Code - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization.
8. VTE Confirmed – Documentation by a physician/advanced practice nurse/physician assistant (physician/APN/PA) that a diagnosis of VTE [deep vein thrombosis (DVT) and/or pulmonary embolism (PE)] was confirmed in a defined location. Allowable values: Yes or No/UTD
9. VTE Diagnostic Test – Documentation that a diagnostic test for VTE was performed. Allowable values: Yes or No/UTD
10. VTE Present at Admission - Documentation by a physician/advanced practice nurse/physician assistant (physician/APN/PA) that VTE was diagnosed or suspected on admission. Allowable values: Yes or No/UTD.

**2a1.8 Denominator Exclusions** (Brief narrative description of exclusions from the target population):

- Patients less than 18 years of age
- Patients who have a length of stay greater than 120 days
- Patients with Comfort Measures Only documented
- Patients enrolled in clinical trials
- Patients with ICD-9-CM Principal Diagnosis Code of VTE as defined in Appendix A, Table 7.03 or 7.04
- Patients with VTE Present at Admission
- Patients with reasons for not administering mechanical and pharmacologic prophylaxis
- Patients without VTE confirmed by diagnostic testing

**2a1.9 Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses):

The patient age in years is equal to the Admission Date minus the Birthdate. The month and day portion of the admission date and birthdate are used to yield the most accurate age. Patients less than 18 years are excluded.

- Length of stay (LOS) in days is equal to the Discharge Date minus the Admission Date. If the LOS is greater than 120 days, the patient is excluded.
- Patients are excluded if allowable value 1, 2 or 3 is selected for Comfort Measures Only.
- Patients are excluded if “Yes” is selected for Clinical Trial.
- Patients with a Principal ICD-9-CM Diagnosis Code on Table 7.03 or 7.04. are excluded.
- Patients are excluded if “Yes” is selected for VTE Present at Admission.
- Patients are excluded if allowable value “3” is selected for VTE Prophylaxis Status.
- Patients are excluded if “No” is selected for VTE Diagnostic Test.
- Patients are excluded if “No” is selected for VTE Confirmed.

**2a1.10 Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses):

Not Applicable

**2a1.11 Risk Adjustment Type** (Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13): No risk adjustment or risk stratification

**2a1.12 If "Other," please describe:**

**2a1.13 Statistical Risk Model and Variables** (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.):

No risk adjustment or risk stratification as intermediate outcome

**2a1.14-16 Detailed Risk Model Available at Web page URL** (or attachment). Include coefficients,

equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:

**2a1.17-18. Type of Score:** Rate/proportion

**2a1.19 Interpretation of Score** (*Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score*):  
Better quality = Lower score

**2a1.20 Calculation Algorithm/Measure Logic**(*Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.*):

1. Start processing. Run cases that are included in the VTE Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2. Check ICD-9-CM Principal Diagnosis Code
  - a. If the ICD-9-CM Principal Diagnosis Code is on Table 7.03 or 7.04 (VTE, Obstetrics-VTE), the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - b. If the ICD-9-CM Principal Diagnosis Code is not on Table 7.03 or 7.04, continue processing and proceed to ICD-9-CM Other Diagnosis Code.
3. Check ICD-9-CM Other Diagnosis Codes
  - a. If all ICD-9-CM Other Diagnosis Codes are missing or none of them on Table 7.03 or 7.04, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
  - b. If at least one of the ICD-9-CM Other Diagnosis Codes is on Table 7.03 or 7.04, continue processing and proceed to VTE Present at Admission.
4. Check VTE Present at Admission
  - a. If VTE Present at Admission is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If VTE Present at Admission equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
  - c. If VTE Present at Admission equals No, continue processing and proceed to Comfort Measures Only.
5. Check Comfort Measures Only
  - a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If Comfort Measures Only equals 1, 2, or 3, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
  - c. If Comfort Measures Only equals 4, continue processing and proceed to Clinical Trial.
6. Check Clinical Trial
  - a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
  - b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
  - c. If Clinical Trial equals No, continue processing and proceed to VTE Diagnostic Test.

7. Check VTE Diagnostic Test

- a. If VTE Diagnostic Test is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If VTE Diagnostic Test equals No, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
- c. If VTE Diagnostic Test equals Yes, continue processing and proceed to VTE Confirmed.

8. Check VTE Confirmed

- a. If VTE Confirmed is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
- b. If VTE Confirmed equals No, the case will proceed to a Measure Category Assignment of B and will not be in the measure population.

9. Check VTE Prophylaxis Status

- a. If VTE Prophylaxis status is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop Processing.
- b. If VTE confirmed equals 3, the case will proceed to a Measure Category Assignment of B and will not be in the measure Population. Stop Processing.
- c. If VTE Prophylaxis Status equals 1, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population.
- d. If VTE Confirmed equals 2, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop Processing.

**2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:**

Attachment

2zv\_VTE6.pdf

**2a1.24 Sampling (Survey) Methodology.** If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):

The global Initial Patient Population includes patients discharged from inpatient acute care. Patients with an ICD-9-CM Secondary Diagnosis Code as defined in Appendix A, Tables 7.03 and 7.04 (VTE, Obstetric-VTE), a Patient Age (Admission Date minus Birthdate) greater than or equal to 18 years, and a Length of Stay (Discharge Date minus Admission Date) less than or equal to 120 days are included. The patients cannot have an ICD-9-CM Principal Diagnosis Code as defined in Appendix A, Tables 7.03 and 7.04. The secondary VTE Only sub-population is not eligible for sampling and will use the entire Initial Patient Sub-Population for reporting.

**2a1.25 Data Source** (*Check all the sources for which the measure is specified and tested*). If other, please describe:

Claims, Paper Records

**2a1.26 Data Source/Data Collection Instrument** (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): Each data element in the data dictionary includes suggested data sources.

The data are collected using contracted Performance Measurement Systems (vendors) that develop data collection tools based on the measure specifications. The tools are verified and tested by Joint Commission staff to confirm the accuracy and conformance of the data collection tool with the measure specifications. Verification must be completed and passed before the vendor can offer the data collection tool to hospitals.

**2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment:**

**2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:**

Attachment

VTE 4.0 ManualLF-634469532965647398.pdf

**2a1.33 Level of Analysis** (Check the levels of analysis for which the measure is specified and tested):

Facility, Other

**2a1.34-35 Care Setting** (Check all the settings for which the measure is specified and tested):

Inpatient/Hospital

**2a2. Reliability Testing.** (Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability.)

**2a2.1 Data/Sample** (Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):

The VTE measure set has been in national use since the 4th quarter of 2009. It is a requirement of participation in the ORYX initiative that data on all measures in the set are collected. (ORYX is the term used by The Joint Commission to describe the component of the hospital accreditation program which requires data collection and reporting on standardized national performance measures.) Demographics of organizations collecting and reporting data on these measures is as follows:

78 health care organizations representing various types, locations and sizes:

5 For Profit, 22 Not for Profit, 44 Military Facilities, 2 County, 5 other

3 >500 beds; 7 250-500 beds; 60 <250 beds; 8 facilities did not report # of beds

Located in: AE, AK, AP, AR, CA, DO, DC, FL, GA, HI, IA, ID, IN, KS, KY, LA, MD, MN, NO, MS, NC, NE, NM, NV, NY, OH, SC, TX, VA, WA, WI, WY,

8 performance measurement systems

**2a2.2 Analytic Method** (Describe method of reliability testing & rationale):

At the time this measure was originally created, extensive tests were conducted. Alpha testing was conducted from June 2006 until August 2006. Broad scale pilot testing of this measure took place from January 2007 through June 2007. Data elements were reviewed for reliability during this phase of testing as well.

Currently, these hospitals are supported in their data collection and reporting efforts by eight contracted performance measurement system (PMS) vendors. It is a contractual requirement of Joint Commission listed vendors that the quality and reliability of data submitted to them by contracted health care organizations must be monitored on a quarterly basis. In addition, The Joint Commission analyzes these data by running 17 quality tests on the data submitted into ORYX. (ORYX is the term used by The Joint Commission to describe the component of the hospital accreditation program which requires data collection and reporting on standardized national performance measures). The following is a list of the major tests done on the submitted ORYX data, taken from the 2011 ORYX Performance Measurement System Requirements manual.

- Transmission of complete data
- Usage of individual core measure data received: To understand if the HCO provides the relevant service to treat the relevant population
- Investigation of aberrant data points
- Verification of patient population and sample size
- Identification of missing data elements

- Validation of the accuracy of target outliers
- Data integrity
- Data corrections

#### Data Element Agreement Rate:

Inter-rater reliability testing methodology utilized by contracted performance measure system vendors as outlined in the is as follows:

- All clinical data elements and all editable demographic elements are scored.
- All measure data are reabstracted with originally abstracted data having been blinded so that the reabstraction is not biased.
- Reabstracted data are compared with originally abstracted data on a data element by data element basis. A data element agreement rate is calculated. Clinical and demographic data are scored separately, and an overall agreement rate is computed.

#### 2a2.3 Testing Results (*Reliability statistics, assessment of adequacy in the context of norms for the test conducted*):

Data element agreement rates reported to The Joint Commission for the time period of one calendar year have shown an agreement rate of 98.41%. This reflects the findings of 12 participating hospitals, comprising 1,180 records (100% sample). The following table delineates calculated agreement rates for individual data elements that are used to compute measure rates for VTE-6.

Data Elements with a Mismatch	total n	total d	rate
Comfort Measures Only	88	90	97.78%
VTE Confirmed	17	18	94.44%
VTE Diagnostic Test	19	20	95.00%
VTE Present at admission	5	6	83.33%

These agreement rates are considered to be well within acceptable levels.

#### 2b. VALIDITY. Validity, Testing, including all Threats to Validity: H● M● L● I●

##### 2b1.1 Describe how the measure specifications (*measure focus, target population, and exclusions*) are consistent with the evidence cited in support of the measure focus (*criterion 1c*) and identify any differences from the evidence:

The measure focuses on identifying patients who developed confirmed VTE during the episode of care by reviewing all patients with a secondary diagnosis of VTE. Patients who 1) were below 18 years of age, 2) had a length of stay (LOS) more than 120 days, 3) were enrolled in a clinical trial for VTE or comfort measures only (which was designated anytime during hospitalization) were excluded to harmonize with other CMS/Joint Commission measures. In addition, patients admitted with suspected or diagnosed VTE or those who have a Present On Admission code were excluded. Lastly, patients with contraindications to both mechanical and pharmacologic prophylaxis and those without VTE in defined locations confirmed by diagnostic testing were excluded. Patients who did not receive VTE prophylaxis for any reason and then developed VTE during hospitalization are included in the numerator.

The ACCP guidelines support a strategy to prevent VTE in hospitalized patients; this measure is an opportunity for hospitals to determine how many patients did not receive any VTE prophylaxis and how many that did receive prophylaxis developed VTE during hospitalization (denominator) based on strong evidence-based recommendations. This is the only VTE measure that does not allow sampling, so all patients with a secondary code of VTE are evaluated. However, it should be noted that the rate only reflects patients with confirmed VTE, which is defined as DVT located in the proximal leg veins, including the inferior vena cava (IVC), iliac, femoral or popliteal veins, or to pulmonary emboli (PE). This measure does not evaluate VTE in other sites of venous thrombosis unless a proximal leg DVT or PE are also involved. In

addition, patients “suspected” of having VTE at admission, but were later found to not have VTE, were excluded.

**2b2. Validity Testing.** *(Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

**2b2.1 Data/Sample** *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):*

78 health care organizations representing various types, locations and sizes:

5 For Profit, 22 Not for Profit, 44 Military Facilities, 2 County, 5 other

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Located in: AE, AK, AP, AR, CA, DO, DC, FL, GA, HI, IA, ID, IN, KS, KY, LA, MD, MN, NO, MS, NC, NE, NM, NV, NY, OH, SC, TX, VA, WA, WI, WY,

8 performance measurement systems

**2b2.2 Analytic Method** *(Describe method of validity testing and rationale; if face validity, describe systematic assessment):*

At the time this measure was originally tested, extensive tests of measure validity were conducted. Alpha testing was conducted from June 2006 until August 2006 to test face validity. Broad scale pilot testing of this measure took place from January 2007 through June 2007. Data elements were reviewed for validity during this phase of testing as well.

Since the measure has been in national use, continued face validity of the measure has been determined through analysis of feedback from measure users. The Joint Commission provides a web-based application with which measure users can provide feedback regarding appropriateness of measure specifications, request clarification of specifications, and/or provide other comments pertinent to the measure. This feedback is systematically continually reviewed in order to identify trends and to identify areas of the measure specifications that require clarification or revision. Additionally, Joint Commission staff continually monitor the national literature and environment in order to assess continued validity of this measure.

**2b2.3 Testing Results** *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment):*

Analysis of feedback obtained via our automated feedback system reveals about 26 submissions regarding specifications for this measure since its implementation in 2009. Predominant themes of these submissions involved questions regarding the data element VTE Present at Admission, and data element VTE confirmed. . In response to these issues, measure specifications were changed to imbed the new concepts of VTE 6 into existing data elements, and to merge those with the corresponding SCIP and STK measures. Sampling information was adjusted to allow for other ICD-9-CM codes of VTE presence to be included. The data dictionary was modified from VTE present on arrival to VTE present on admission.

Multiple notes for abstractors were added, and exclusion guidelines were edited. Clarifications were written regarding acceptable diagnostic testing, and VTE prophylaxis status at discharge.

**POTENTIAL THREATS TO VALIDITY.** *(All potential threats to validity were appropriately tested with adequate results.)*

**2b3. Measure Exclusions.** *(Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.)*

**2b3.1 Data/Sample for analysis of exclusions** *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):*

78 health care organizations representing various types, locations and sizes:

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3 >500 beds; 7 250-500 beds; 60 <250 beds; 8 facilities did not report # of beds

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See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

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## 8 performance measurement systems

### **2b3.2 Analytic Method** *(Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference):*

Measure exclusions that were not derived directly from the evidence are presented below. Please note that these are population exclusions that are necessary to ensure consistency in all measures in this 6 measure set.

These exclusions were analyzed for frequency of occurrence. An issue that is of great concern to users of this measure is that due to the presence of exceptions to the measure, attainment of a 100% measure rate is not possible. Because of the role of this measure in the current Joint Commission accreditation process and the role it is anticipated to play in the determination of value based purchasing incentives, this is especially troubling to measure users. This concern is the basis for a number of the non-evidence-based exclusions to these measures. Additional reasons for these population exclusions are enumerated in our response to section 2b1.1 above.

1. Patients with LOS <120 days
2. Patients documented as Comfort Measures only
3. Patients enrolled in clinical trials
4. Patients with ICD-9-CM Principal Diagnoses of Mental disorders or stroke
5. Patients with VTE Present at admission

### **2b3.3 Results** *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*

N=1298

1. Patient with a LOS > 120 days= 0%
2. Patient documented as Comfort Measures Only= 1.93%
3. Patients enrolled in Clinical trials=0.15%
4. Patients with a principal diagnosis code of VTE= 0%
5. Patients with VTE present at admission= 6.09%

### **2b4. Risk Adjustment Strategy.** *(For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.)*

#### **2b4.1 Data/Sample** *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):*

This measure was not risk adjusted, because it is an intermediate outcome measure

#### **2b4.2 Analytic Method** *(Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables):*

Not Applicable

#### **2b4.3 Testing Results** *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata):*

Not Applicable

#### **2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment:** Although this measure is technically an intermediate outcome measure, it

actually can be thought of more as a process measure because it is evaluating the process of using VTE prophylaxis.

It is possible that there are no valid risk adjusters for this intermediate outcome since appropriate VTE prophylaxis can generally be achieved regardless of a patient's pre-existing medical conditions due to the multitude of mechanical as well as pharmacological prophylactic modalities available.

**2b5. Identification of Meaningful Differences in Performance.** *(The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.)*

**2b5.1 Data/Sample** *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):*

78 health care organizations representing various types, locations and sizes:

5 For Profit, 22 Not for Profit, 44 Military Facilities, 2 County, 5 other

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Located in: AE, AK, AP, AR, CA, DO, DC, FL, GA, HI, IA, ID, IN, KS, KY, LA, MD, MN, NO, MS, NC, NE, NM, NV, NY, OH, SC, TX, VA, WA, WI, WY,

8 performance measurement systems

**2b5.2 Analytic Method** *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance):*

The method used to analyze meaningful differences in performance at The Joint Commission is Target Analysis. The object of target analysis is to compare a health care organization's (HCO) data against a comparative norm for the purpose of evaluating performance improvement opportunities. When an organization's performance level is statistically significantly different from a comparative norm, it is considered a statistical deviation. A statistical deviation may be desirable or undesirable depending on the "direction of improvement" of the measure.

There are two components to the target analysis methodology used at The Joint Commission. Given the national average for a performance measure, a target range is constructed. Using generalized linear mixed models methodology (also known as hierarchical models), a predicted estimate of an HCO's performance, with a corresponding 95% confidence interval, is generated. This confidence interval is compared to the target range, to determine the HCOs' rating. The estimate of the organization's true performance is based on both the data from that organization and on data from the entire set of reporting organizations

**2b5.3 Results** *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningful differences in performance):*

VTE-6 Distribution of Outliers

2010 4th Quarter Data:

Scores on this measure: N=34, Mean 6%, SD 0.19805

10th Percentile= 0%

25th Percentile= 0%

50th Percentile= 0%

75th Percentile= 0%

90th Percentile= 25%

#### Analysis of Measure Results

17 (22.97 %) Neutral – results not significantly different from the target range

0 Undesirable – results are statistically significantly lower than the national rate

57 (77.03%) missing data

**2b6. Comparability of Multiple Data Sources/Methods.** *(If specified for more than one data source, the various approaches result in comparable scores.)*

**2b6.1 Data/Sample** (Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included):

Multiple data sources are not used for this measure.

**2b6.2 Analytic Method** (Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure):

Not Applicable

**2b6.3 Testing Results** (Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted):

Not Applicable

**2c. Disparities in Care:** H ☒ M ☒ L ☒ I ☒ NA ☒ (If applicable, the measure specifications allow identification of disparities.)

**2c.1 If measure is stratified for disparities, provide stratified results** (Scores by stratified categories/cohorts): This measure is not stratified for disparities because none have been identified.

**2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:**

This measure was originally specified to capture overall rates of VTE without prophylaxis with no focus on disparities. The Joint Commission does not currently capture data elements for race or ethnicity because these data elements have not been shown to be reliably collectable due to the fact that no national standardized definitions exist for these data elements. Also, not all hospitals collect race and ethnicity. In the future, it may be feasible for The Joint Commission to explore how race and ethnicity and other relevant disparity data, might be collected reliably in the future. Future measure data could also be evaluated according to sex, age and geographic location.

**2.1-2.3 Supplemental Testing Methodology Information:**

**Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met? (Reliability and Validity must be rated moderate or high) Yes ☒ No ☒**

**Provide rationale based on specific subcriteria:**

**If the Committee votes No, STOP**

### 3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (**evaluation criteria**)

**C.1 Intended Actual/Planned Use** (Check all the planned uses for which the measure is intended): Public Reporting, Quality Improvement (external benchmarking to organizations), Quality Improvement (Internal to the specific organization), Regulatory and Accreditation Programs

**3.1 Current Use** (Check all that apply; for any that are checked, provide the specific program information in the following questions): Public Reporting, Regulatory and Accreditation Programs, Quality Improvement with Benchmarking (external benchmarking to multiple organizations), Quality Improvement (Internal to the specific organization)

**3a. Usefulness for Public Reporting:** H ☒ M ☒ L ☒ I ☒

*(The measure is meaningful, understandable and useful for public reporting.)*

**3a.1. Use in Public Reporting - disclosure of performance results to the public at large** *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)). If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.]*

The Joint Commission has a longstanding commitment to providing meaningful information about the comparative performance of accredited organizations to the public. The Quality Check® Web site, [www.qualitycheck.org](http://www.qualitycheck.org), launched in 2004, fulfills this commitment. Among other things, Quality Check allows consumers to view or download free hospital performance measure results. Measure rates for VTE-6 (and all the VTE measures) are included in the hospital performance measure results.

This measure is included among the 15 clinical quality measures required in Stage 1 of meaningful use that must be reported by eligible hospitals and critical access hospitals in order to be eligible for the Medicare or Medicaid electronic health record incentive programs.

In addition, this measure is included in the CMS FY 2012 Final Rule for the Inpatient Prospective Payment System for consideration to be included in the Hospital Inpatient Quality Reporting Program FY 2015 payment determination. Data collection will begin with discharges on or after January 2013.

**3a.2. Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting.** *If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: All measure specifications (e.g., numerator, denominator, exclusions, data elements and measure calculation algorithms) are standardized in order to produce consistent measure results. Specifications are updated biannually based on feedback from vendors, and hospitals, as well as technical advisory member recommendations and updated clinical practice guidelines. Data are collected using data collection tools that have been verified by The Joint Commission to accurately collect measure data elements and compute measure assignment categories according to the measure specifications. Quarterly data reported to The Joint Commission are subject to a number of data quality tests to ensure the accuracy of the data. The measure rate is computed using a standardized measure calculation algorithm that is Section 508 compliant so the information is understandable to the general public.*

The Joint Commission provides an opportunity for abstractors to submit questions and feedback about the measure specifications via an on-line website. This information is used to evaluate the need for revisions and provide abstractors with a database of frequently asked questions. Measure updates and issues about the measures are presented and discussed at an annual vendor conference. These activities support the Joint Commission's effort to provide results that are useable, understandable and useful for public reporting.

**3.2 Use for other Accountability Functions (payment, certification, accreditation).** *If used in a public accountability program, provide name of program(s), locations, Web page URL(s): The Joint Commission is a national (and international) accreditor of hospitals and other healthcare organizations. This measure set is one of 10 available measure sets from which hospitals can select to meet The Joint Commission's ORYX accreditation program requirement for data collection and reporting. Additional information located at: <http://www.jointcommission.org/accreditation/hospitals.aspx>*

*These measures are used in the CMS Inpatient Quality Reporting program. They are the basis for e Measures required as clinical quality measures for Stage 1 of meaningful use of the electronic health record.*

### **3b. Usefulness for Quality Improvement: H ● M ● L ● I ●**

*(The measure is meaningful, understandable and useful for quality improvement.)*

**3b.1. Use in QI.** *If used in quality improvement program, provide name of program(s), locations, Web page URL(s):*

**[For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement].**

While The Joint Commission developed this measure for and uses results from this measure in its accreditation activities, the measure is also intended for use in internal quality improvement by accredited organizations.

**3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement.** If usefulness was demonstrated (e.g., QI initiative), describe the data, method and results:

From an accreditation perspective, measure results have proven useful in that they are used in the Priority Focus Process, which helps to focus accreditation survey activities toward areas of greatest need. From the hospital quality improvement perspective, measure rates are included in the Joint Commission's Strategic Surveillance System (S3) product, which is made available at no additional cost, to accredited organizations and is used by them to identify gaps in the care they provide relative to other measure users. Aggregate measure results have improved over time, indicating that they are being used by hospitals to identify and address areas in need of improvement.

**Overall, to what extent was the criterion, Usability, met? H M L I**  
Provide rationale based on specific subcriteria:

#### 4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

**4a. Data Generated as a Byproduct of Care Processes: H M L I**

**4a.1-2 How are the data elements needed to compute measure scores generated?** (Check all that apply).

Data used in the measure are:

generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition, Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry), Other

Data elements like admission date and discharge date may be generated by administrative data.

**4b. Electronic Sources: H M L I**

**4b.1 Are the data elements needed for the measure as specified available electronically** (Elements that are needed to compute measure scores are in defined, computer-readable fields): ALL data elements in electronic health records (EHRs)

**4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:**

**4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H M L I**

**4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:**

Patients who do not receive VTE prophylaxis because the physician did not think prophylaxis was warranted should be in the numerator of VTE-6. Additional analysis is planned to confirm that the abstractors are not excluding them with the data element VTE Prophylaxis Status allowable value 3 which would place them in the denominator and discussion about this issue is planned for the annual vendor conference.

#### 4d. Data Collection Strategy/Implementation: H● M● L● I●

**A.2 Please check if either of the following apply (regarding proprietary measures):**

**4d.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues (e.g., fees for use of proprietary measures):**

Although this measure has been specified for electronic data collection via the meaningful use of EHR program, at the present time, hospitals using this performance measure generally collect measure data via manual review of the paper medical record. Collected data are submitted to The Joint Commission on a quarterly basis, by way of contracted performance measurement system vendors, as described previously. Specifications for this measure are freely available to anyone who wishes to use the measure. Feedback from hospitals using this measure indicates that required data elements are generally available in the medical record, and measure specifications are robust and easy to understand. As described above, as feedback from measure users has indicated the need for clarification or revision of measure specifications, this has taken place.

**Overall, to what extent was the criterion, *Feasibility*, met? H● M● L● I●**  
**Provide rationale based on specific subcriteria:**

### OVERALL SUITABILITY FOR ENDORSEMENT

**Does the measure meet all the NQF criteria for endorsement? Yes● No●**

**Rationale:**

**If the Committee votes No, STOP.**

**If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.**

### 5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

**5.1 If there are related measures (either same measure focus or target population) or competing measures (both the same measure focus and same target population), list the NQF # and title of all related and/or competing measures:**

#### 5a. Harmonization

**5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized?**

**5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:**

#### 5b. Competing Measure(s)

**5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s):**

**Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to**

*measure quality*); **OR provide a rationale for the additive value of endorsing an additional measure.**  
(Provide analyses when possible):

## CONTACT INFORMATION

**Co.1 Measure Steward (Intellectual Property Owner):** The Joint Commission, One Renaissance Boulevard, Oakbrook Terrace, Illinois, 60181

**Co.2 Point of Contact:** Jerod M., Loeb, PhD, [jloeb@jointcommission.org](mailto:jloeb@jointcommission.org), 630-792-5920-

**Co.3 Measure Developer if different from Measure Steward:** The Joint Commission, One Renaissance Boulevard, Oakbrook Terrace, Illinois, 60181

**Co.4 Point of Contact:** Jerod M., Loeb, PhD, [jloeb@jointcommission.org](mailto:jloeb@jointcommission.org), 630-792-5920-

**Co.5 Submitter:** Ann, Watt, MBA, RHIA, [awatt@jointcommission.org](mailto:awatt@jointcommission.org), 630-792-5944-, The Joint Commission

**Co.6 Additional organizations that sponsored/participated in measure development:**

**Co.7 Public Contact:** Ann, Watt, MBA, RHIA, [awatt@jointcommission.org](mailto:awatt@jointcommission.org), 630-792-5944-, The Joint Commission

## ADDITIONAL INFORMATION

**Workgroup/Expert Panel involved in measure development**

**Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

Dale Bratzler, DO, MPH, Co-Chair  
Oklahoma Foundation for Medical Quality  
Oklahoma City, OK  
Joseph A. Caprini, MD, MS, RVT, Co-Chair  
Evanston Northwestern Healthcare  
Evanston, IL  
Anne R. Bass, MD  
Weill Medical College of Cornell University  
Hospital for Special Surgery  
New York, NY  
Stephen V. Cantrill, MD  
Denver Health Medical Center  
Denver, CO  
Vanessa K. Dalton, MD, MPH  
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John A. Heit, MD, SC Co-Chair  
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Franklin A. Michota, Jr., MD  
Cleveland Clinic Foundation  
Cleveland, OH  
Ruth Morrison, BSN, CVN  
Brigham & Women's Hospital  
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Robert Jeffery Panzer, MD  
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Vincent Pellegrini, Jr., MD  
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The technical advisory panel (TAP) members determined priority areas that could be evaluated to improve care related to prevention and treatment for VTE during the development timeframe. Public comments and hospital feedback was reviewed during the testing phases of the project to assist the TAP in making the final measure recommendations. After implementation, minor revisions, acknowledged by TAP representatives, were made to improve clarity.

**Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward:**

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.3 Year the measure was first released:** 2009

**Ad.4 Month and Year of most recent revision:** 07, 2011

**Ad.5 What is your frequency for review/update of this measure?** Biannual

**Ad.6 When is the next scheduled review/update for this measure?** 01, 2012

**Ad.7 Copyright statement:** The Specifications Manual for National Hospital Inpatient Quality Measures (Specifications Manual) is the result of the collaborative efforts of the Centers for Medicare & Medicaid

Services (CMS) and The Joint Commission to publish a uniform set of national hospital quality measures. A primary objective of this collaborative effort is to promote and enhance the utility of these measures for all hospitals.

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**Ad.8 Disclaimers:**

**Ad.9 Additional Information/Comments:**

**Date of Submission (MM/DD/YY):** 09/13/2011