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.

NQF #: 0503 NQF Project: Patient Safety Measures-Complications Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Oct 24, 2008 Most Recent Endorsement Date: Oct 24, 2008 Last Updated Date: Sep 14, 2011

BRIEF MEASURE INFORMATION

De.1 Measure Title: Anticoagulation for acute pulmonary embolus patients

Co.1.1 Measure Steward: American College of Emergency Physicians

De.2 Brief Description of Measure: Number of acute embolus patients who have orders for anticoagulation (heparin or low-molecular weight heparin) for pulmonary embolus while in the ED.

2a1.1 Numerator Statement: Patients who had orders for anticoagulation.

2a1.4 Denominator Statement: All patients presenting to the emergency department (ED) with a diagnosis of pulmonary embolus.

2a1.8 Denominator Exclusions: i. Patients already adequately anticoagulated (orally or parenterally).
ii. Patients with contraindication to anticoagulation
iii. Patients deemed inappropriate anticoagulation candidates (e.g. hospice patients, cardiac arrest)
iv. Patients for whom further consultation is necessary prior to the possible initiation of anticoagulation.
v. Patients who are admitted from the ED with ED LOS less than 30 minutes from time of confirmed diagnosis.
vi. Patient refusal.
vii. Patients who do not complete their ED evaluation (Left before completion, Left AMA, etc.

1.1 Measure Type: Process
2a1. 25-26 Data Source: Administrative claims, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Pharmacy, Paper Records
2a1.33 Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Facility

1.2-1.4 Is this measure paired with another measure? No

De.3 If included in a composite, please identify the composite measure (*title and NQF number if endorsed*):
n/a

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

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*):
5. Similar/related endorsed or submitted measures (*check 5.1*):
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

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 guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas *(Check all the areas that apply)*: Cardiovascular, Pulmonary/Critical Care, Pulmonary/Critical Care : Critical Care
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Safety

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Patient/societal consequences of poor quality, Severity of illness

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
Since the original measure application, there have been a few studies published in the literature to demonstrate the importance of timely treatment of pulmonary embolism in the ED. First, data from the Agency for Healthcare Research and Quality´s National Inpatient Sample suggests that about 158,000 patients are admitted to US hospitals with a diagnosis of PE each year, and that 72% of these patients were diagnosed as having a PE in the ED suggesting that the emergency department is an appropriate setting for measurement of this important clinical condition.

There are also two studies to suggest a performance gap that may be associated with worse clinical outcomes since our original submission. 1) A retrospective study of 400 patient´s diagnosed with acute pulmonary embolism in the ED at the Mayo Clinic demonstrated that only 70% of patients were anticoagulated in the ED, and that patients who had delayed anticoagulation (either on the floor and/or as measured by a delayed therapeutic aPTT) had higher mortality. 2) A more recent, prospective registry of ED patients diagnosed with acute pulmonary embolism demonstrated that 84% of all patients with acute PE were anticoagulated in the ED.

1a.4 Citations for Evidence of High Impact cited in 1a.3: 1. Smit SB, Geske JB, Maguire JM, et al. Early Anticoagulation is Associated with Reduced Mortality for Acute Pulmonary Embolism. Chest; 137(6): 1382-90.

2. Pollack CV, Schreiber D, Goldhaber SZ, et al. Clinical Characteristics, Management and Outcomes of patients diagnosed with acute pulmonary embolism in the emergency department. J American Coll Cardiology; 57(6): 700-06.

3. Agency for Healthcare Research and Quality. National Inpatient Sample. http://www.hcup-us.ahrq.gov/nisoverview.jsp. Accessed September 14, 2011.

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:
ED patients who have delayed anticoagulation (either on the floor and/or as measured by a delayed therapeutic aPTT) have higher mortality.

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.*]
There are two studies to suggest a performance gap that may be associated with worse clinical outcomes since our original submission. 1) A retrospective study of 400 patient´s diagnosed with acute pulmonary embolism in the ED at the Mayo Clinic demonstrated that only 70% of patients were anticoagulated in the ED, and that patients who had delayed anticoagulation (either on the floor and/or as measured by a delayed therapeutic aPTT) had higher mortality. 2) A more recent, prospective registry of ED patients diagnosed with acute pulmonary embolism demonstrated that 84% of all patients with acute PE were anticoagulated in the

ED, and that the performance gap was X% when excluding those that received empiric anticoagulation.

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*]

1. Smit SB, Geske JB, Maguire JM, et al. Early Anticoagulation is Associated with Reduced Mortality for Acute Pulmonary Embolism. Chest; 137(6): 1382-90.

2. Pollack CV, Schreiber D, Goldhaber SZ, et al. Clinical Characteristics, Management and Outcomes of patients diagnosed with acute pulmonary embolism in the emergency department. J American Coll Cardiology; 57(6): 700-06.

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

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*]

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 ☐

Quantity	Quality	Consistency	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

1c.1 Structure-Process-Outcome Relationship *(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)*:

1c.2-3 Type of Evidence *(Check all that apply)*:
Selected individual studies (rather than entire body of evidence)

1c.4 Directness of Evidence to the Specified Measure *(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)*:

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*:

1c.6 Quality of Body of Evidence (*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 intervals due to few patients or events*):

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):*

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

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

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

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

1c.12 If other, identify and describe the grading scale with definitions: Not graded

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

1c.14 Summary of Controversy/Contradictory Evidence:

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

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:

1c.17 Clinical Practice Guideline Citation:

1c.18 National Guideline Clearinghouse or other URL:

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

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

1c.22 If other, identify and describe the grading scale with definitions: not graded

1c.23 Grade Assigned to the Recommendation:

1c.24 Rationale for Using this Guideline Over Others:

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: Moderate1c.27 Consistency: Moderate
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? No

S.2 If yes, provide web page URL:

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 had orders for anticoagulation.

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

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*:
Number of patients in the denominator who have orders for anticoagulation (heparin or low-molecular weight heparin) for pulmonary embolus while in the ED.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
All patients presenting to the emergency department (ED) with a diagnosis of pulmonary embolus.

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

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

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)*:
CPT E/M service codes: 99281, 99282, 99283, 99284, 99285, 99291
ICD-9 diagnosis codes: 415.11, 415.13, 415.19

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
i. Patients already adequately anticoagulated (orally or parenterally).
ii. Patients with contraindication to anticoagulation
iii. Patients deemed inappropriate anticoagulation candidates (e.g. hospice patients, cardiac arrest)
iv. Patients for whom further consultation is necessary prior to the possible initiation of anticoagulation.
v. Patients who are admitted from the ED with ED LOS less than 30 minutes from time of confirmed diagnosis.
vi. Patient refusal.
vii. Patients who do not complete their ED evaluation (Left before completion, Left AMA, etc.

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)*:
Denominator Coding: CPT E/M service codes: 99281, 99282, 99283, 99284, 99285, 99291; ICD-9 diagnosis codes: 415.11, 415.13, 415.19.

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)*:
n/a

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.)*:
n/a

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: Count

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 = Higher 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.)*:
n/a

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

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):
n/a

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Administrative claims, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Pharmacy, 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.*): n/a

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:

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

Clinician : Individual, Facility

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

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)*:
In the EMPEROR cohort, data were prospectively collected on patients who presented to the ED and were diagnosed with acute pulmonary embolism. This data sample used a web-based data collection tool that allowed research assistants and study physicians to abstract patient information from the medical record including timing of the anticoagulation order.

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
Data were prospectively collected in the EMPEROR registry and demonstrate the use of a web-based electronic data collection form with pre-defined data-fields that have been shown to have high reliability. Pollack CV, Schreiber D, Goldhaber SZ, et al. Clinical Characteristics, Management and Outcomes of patients diagnosed with acute pulmonary embolism in the emergency department. J American Coll Cardiology; 57(6): 700-06.

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

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:

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)*:

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

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)*:

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)*:
The exclusions listed for this measure reflect populations in whom anticoagulation would be inappropriate either clinically or ethically and are consistent with exclusions used in studies of anticoagulation for the treatment of acute pulmonary embolism.

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

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

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)*:

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

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)*:

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment:

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)*:
In the study performed by Smith et al, only 70% of patients were anticoagulated in the ED for acute pulmonary embolism and both in-hospital and 30-day mortality was associated with delayed anticoagulation. Delayed anticoagulation defined as either heparin after admission or as a delayed therapeutic aPTT were both associated with mortality providing some mechanistic support for this process measure. The mortality differences reportesreports in this study were marked and demonstrate a clinically meaningful endpoint: patients receiving heparin in the ED had in-hospital and 30-day mortality of 1.4% and 4.4%, while those receiving heparin after admission had mortalities of 6.7% and 15.3%, respectively.

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
Since field testing is currently ongoing, the specific parameters for statistical and practical differences are not yet defined. The data from Smith above, however, suggest that delayed anticoagulation may be associated with mortality, which is a very meaningful (non-surrogate) outcome. We will provide specific measure performance characteristics when field testing is complete.

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

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)*:

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

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)*:

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)*:

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

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 (Internal to the specific organization)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Not in use

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 measure specifications are currently under review and being modified by ACEP and CMS´ contractor, PMBR. We have included the most recent information, but changes may be forthcoming. We will make this information available following a meeting ACEP will have with PMBR in early October 2011.

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:
Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

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):

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*].

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:

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:
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)

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)*: Some data elements are in electronic sources

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:
This measure is defined by straightforward definition and should not be susceptible to much interpretation during chart abstraction making errors and inaccuracies less likely. However, we do recognize that the measure could be inaccurately reported if empiric anticoagulation.

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)*:
Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality , etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

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): American College of Emergency Physicians, 1125 Executive Circle, Irving, Texas, 75038

Co.2 Point of Contact: Dainsworth, Chambers, dchambers@acep.org, 202-728-0610-3012

Co.3 Measure Developer if different from Measure Steward: American College of Emergency Physicians, 1125 Executive Circle, Irving, Texas, 75038

Co.4 Point of Contact: Dainsworth, Chambers, dchambers@acep.org, 202-728-0610-3012

Co.5 Submitter: Dainsworth, Chambers, dchambers@acep.org, 202-728-0610-3012, American College of Emergency Physicians

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

Co.7 Public Contact: Dainsworth, Chambers, dchambers@acep.org, 202-728-0610-3012, American College of Emergency Physicians

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.

ACEP´s Quality and Peformance Committee (QPC) has been the primary committee involved in developing this measure. This committee is chaired by Brent R. Asplin, MD MPH FACEP. The remaining committee members are as follows:

Dennis M. Beck, MD FACEP
Bruce S. Auerbach, MD FACEP
Paul D. Kivela, MD FACEP
Christopher Baugh, MD MBA

Michelle Blanda, MD FACEP
Jay M. Brenner, MD
Robert I. Broida, MD FACEP
Stephen V. Cantrill, MD FACEP
Dickson S. Cheung, MD FACEP
William C. Dalsey, MD MBA FACEP
Louis G. Graff, MD FACEP
Richard T. Griffey MD MPH FACEP
Diane L. Gurney, MS RN CEN
Kendall K. Hall, MD MS FACEP
Azita Hamedani, MD MPH
Marilyn J. Heine, MD FACEP
Robin R. Hemphill, MD
John J. Kelly, DO FACEP
Kevin M. Klauer, MD
Thomas W. Lukens, MD PhD
Abhi Mehrotra, MD FACEP
Moss H. Mendelson, MD FACEP
John C. Moorhead, MD
Richard Newell, MD MPH
Neal P. O'Connor, MD FACEP
Lee E. Payne, MD FACEP
Michael P. Phelan, MD FACEP
Jesse Pines, MD MBA
Thomas B. Pinson, MD FACEP
David M. Richardson, MD FACEP
Jeremiah Schuur, MD MHS FACEP
Paul Sierzenski, MD RDMS FACEP
Arjun Venkatesh, MD MBA EMRA
Christopher Weissman, MD
Shari J. Welch, MD FACEP
Jennifer L. Wiler, MD FACEP
Gary J. Zaid, MD FACEP
Andrew R. Zinkel, MD
Drew C. Fuller, MD FACEP

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: 2008
Ad.4 Month and Year of most recent revision: 09, 2011
Ad.5 What is your frequency for review/update of this measure? ACEP typically reveiws its measures at least every three years, but sometimes more frequently.
Ad.6 When is the next scheduled review/update for this measure? 04, 2012

Ad.7 Copyright statement: no copyright

Ad.8 Disclaimers:

Ad.9 Additional Information/Comments: Re: NQF measure 0503: "Anticoagulation for acute pulmonary embolus patient". This measure tests the number of acute embolus patients who have orders for anticoagulation (heparin or low-molecular weight heparin) for pulmonary embolus while in the ED.

This measure was developed by ACEP using a multiperson expert group and given time-limited endorsement by NQF. To date we have not field tested the measure. We believe that the measure is scientifically important and are asking NQF to give the measure

another time limited endorsement to allow for measure testing.

As you are aware, there is no dedicated federal funding mechanism for measure testing and development. ACEP has recently approved a process by which we can fund groups to test performance measures. We anticipate that ACEP will be able to conduct field testing of this measure in a reasonable time and will report specifics on measure feasibility and validity back to NQF.

Although we have not field tested the measure, there has been important research published that further documenting the performance gap. Our updated measure application includes two studies that have been recently published, which demonstrate an important performance gap in the measured process. 1) A retropsective study of 400 patients diagnosed with acute pulmonary embolism in the ED at the Mayo Clinic demonstrated that only 70% of patients were anticoagulated in the ED, and that patients who had delayed anticoagulation (either on the floor and/or as measured by a delayed therapeutic aPTT) had higher mortality. 2) A prospective registry of ED patients diagnosed with acute pulmonary embolism demonstrated that 84% of all patients with acute PE were anticoagulated in the ED.

These new data taken in combination with the face validity generated for this measure through our multiperson expert review process, suggest that another time-limited endorsement will provide the necessary impetus to continue work to drive quality improvement for this clinical care process and outcomes.

References

1. Smit SB, Geske JB, Maguire JM, et al. Early Anticoagulation is Associated with Reduced Mortality for Acute Pulmonary Embolism. Chest; 137(6): 1382-90.

2. Pollack CV, Schreiber D, Goldhaber SZ, et al. Clinical Characteristics, Management and Outcomes of patients diagnosed with acute pulmonary embolism in the emergency department. J American Coll Cardiology; 57(6): 700-06

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