NATIONAL QUALITY FORUM

National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

A CONSENSUS REPORT

Foreword

There is virtually no adult in this country who does not have one or more risk factors for venous thromboembolism (VTE), which is the most common single cause of preventable hospital deaths in the United States. Two-thirds of the estimated annual 900,000 cases of VTE in this country occur in the hospital setting, and approximately one-third of VTEs are fatal. The sheer number of lives lost to this highly preventable condition makes addressing it a national priority.

Although there is debate about some aspects of the prevention and treatment of VTE, there is no doubt that VTE is serious, frequently fatal, and preventable. Much has been published about the disease, its risk factors, and the points for intervention, and medical experts continue to conduct research to discover and refine the best approaches to its prevention and care. Despite these efforts, however, the problem persists without measurable improvement.

Since 2003, the National Quality Forum (NQF) has focused considerable attention on this issue—first with *Safe Practices for Better Healthcare*, published in 2003, and then with this two-part VTE project. Additionally, NQF hosted a national Deep Vein Thrombosis (DVT) Summit in 2006 to establish a patient-centered national action plan for DVT prevention, treatment, and research.

This report is the culmination of three years of work of some of the most noted national and international experts in the prevention and care of VTE. Their work resulted in the endorsement of a statement of organization policy, key characteristics of preferred practices, and two performance measures in 2006. This report presents an additional six national voluntary consensus standards that represent the "best-in-class" performance measures for the prevention and treatment of VTE. Because the majority of VTEs occur in hospital settings—despite the availability of the full armamentarium of VTE prophylaxis and treatment—these measures are focused on prevention and treatment in that setting. The measures identified in this report were vetted through NQF's Consensus Development Process, bestowing on them special legal status as voluntary consensus standards. They are suitable for public reporting.

As noted, this report represents a continuation of the NQF VTE project and its first VTE report, *National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Policy, Preferred Practices, and Initial Performance Measures – A Consensus Report*, published in 2006 after work performed in partnership with the Joint Commission. We thank sanofi-aventis for its support of this project, the Joint Commission for its continued commitment to the prevention and care of VTE, and NQF Members and the members of the National Voluntary Consensus Standards for Prevention and Care of VTE Steering Committee and its Technical Advisory Panel. Patients in U.S. hospitals will benefit from their collective stewardship of this work and from their dedication to the prevention and treatment of VTE.

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Executive Summary

In 2006, the National Quality Forum (NQF) endorsed a statement of policy, 17 key characteristics of preferred practices, and 2 measures of prophylaxis in the surgical patient that focused on the care of patients at risk for or diagnosed with venous thromboembolism (VTE). This report is a continuation of that work.

Although debate continues about certain aspects of the prevention and treatment of VTE, it is agreed that VTE remains a serious and frequently fatal reality. However, despite ongoing research to discover and refine the best approaches to prevention and care, the problem persists without marked improvement.

VTE is the most common preventable cause of hospital death. Patients with risk factors for VTE can be identified, and effective strategies are available to prevent deep vein thrombosis and pulmonary embolism—the diseases that comprise VTE. It has been estimated that each year, 12 million hospital patients in the United States are candidates for VTE prophylaxis. The annual incidence of VTE is estimated at 900,000, and approximately 300,000 of these cases are fatal. More than 600,000 of the total cases occurred in the hospital, where the full armamentarium of VTE prophylaxis and treatment is available, and of these cases nearly 200,000 were fatal. Furthermore, of patients whose disease is identified and treatment started prior to discharge home, insufficient bridging of therapies compromises appropriate treatment at home.

The six measures endorsed in this report are focused on hospitals, addressing the clear need for measures in that area. Additionally, two of the endorsed measures extend the focus beyond the hospital by targeting the readiness of patients for discharge in terms of both treatment and education.

National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

- **VTE prophylaxis**
- **Intensive care unit VTE prophylaxis**
- **VTE patients with overlap of anticoagulation therapy**
- **VTE patients receiving unfractionated heparin with dosages/platelet count monitored by protocol (or nomogram)**
- **VTE discharge instructions**
- **Incidence of potentially preventable VTE**

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National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Introduction

In 2006, the National Quality Forum (NQF) endorsed a statement of policy, 17 key characteristics of preferred practices, and 2 measures of prophylaxis in the surgical patient that focused on the care of patients at risk for or diagnosed with venous thromboembolism (VTE).[1] The publication of the 2006 report was one more step in NQF's ongoing effort to provide guidance and tools to facilitate improvement in the prevention and care of VTE. This report is a continuation of that work.

Although there continues to be debate about aspects of the prevention and treatment of VTE, there is no debate that VTE remains a serious and frequently fatal reality. Much has been published about the disease, its risk factors, and the points for intervention. Medical experts continue to conduct research to discover and refine the best approaches to prevention and care. Despite these efforts, however, the problem persists without marked improvement.

[1] National Quality Forum (NQF), *National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism – Policy, Preferred Practices, and Initial Performance Measures: A Consensus Report*, Washington, DC: NQF; 2006.

VTE is preventable, and, in fact, it is the most common preventable cause of hospital death.[2,3,4] Patients with risk factors for VTE can be identified, and effective strategies are available to prevent deep vein thrombosis (DVT) and pulmonary embolism (PE), the diseases that comprise VTE. It has been estimated that each year, 12 million hospital patients in the United States are candidates for VTE prophylaxis.[5] In 2005, Heit et al. reported an estimated incidence of 900,000 cases of VTE each year, of which approximately 300,000 were fatal. More than 600,000 of the total cases occurred in the hospital, where the full armamentarium of VTE prophylaxis and treatment is available, and of these cases nearly 200,000 were fatal.[6] Furthermore, of patients whose disease is identified and for whom treatment is started prior to discharge home, insufficient bridging of therapies compromises appropriate treatment at home.[7]

The six measures endorsed in this report are focused on hospitals, addressing the clear need for measures in this area. Additionally, two of the measures extend the focus beyond the hospital by targeting the readiness of patients for discharge in terms of both treatment and education.

[2] 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;162(11):1245-1248.

[3] Tapson VF, Hyers TM, Waldo AL, et al., Antithrombotic therapy practices in U.S. hospitals in an era of practice guidelines, *Arch Intern Med*, 2005;165(13):1458-1464.

[4] Clagett GP, Anderson FA Jr, Heit JA, et al. Prevention of venous thromboembolism, *Chest*, 1995;108(4 Suppl):312S-334S.

[5] Anderson FA Jr, Zayaruzny M, Heit JA, et al., Estimated annual numbers of U.S. acute-care hospital patients at risk for venous thromboembolism, *Am J Hematol*, 2007;82(9):777-782.

[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 U.S., *Blood (ASH Annual Meeting Abstracts)*, 2005;106:910.

[7] Caprini JA, Tapson VF, Hyers TM, et al., Treatment of venous thromboembolism: adherence to guidelines and impact of physician knowledge, attitudes, and beliefs, *J Vasc Surg*, 2005;42(4):726-733.

National Voluntary Consensus Standards for Prevention and Care of VTE: Additional Performance Measures

Relationship to Other NQF-Endorsed Consensus Standards

NQF's interest in VTE-DVT/PE began in 2003, when it endorsed a set of 30 *Safe Practices for Better Healthcare*,[8] 2 of which addressed the assessment and care of patients at risk for or diagnosed with VTE. In 2006, those two safe practices were updated[9] by the VTE Steering Committee (appendix B) and are included in box A. Of note, the safe practices are applicable beyond hospital settings.

As NQF continued its VTE-related work, in 2006 it endorsed 20 consensus standards for the prevention of and care for VTE-DVT/PE (box B) that addressed 4 domains of care, set forth a statement of policy for

Box A – NQF-Endorsed Safe Practices 28 and 29: 2006

Safe Practice 28

Evaluate each patient upon admission, and regularly thereafter, for the risk of developing VTE-DVT. Utilize clinically appropriate evidence-based methods of thromboprophylaxis.

Additional Specifications

- Document the VTE risk assessment and prevention plan in the patient's record.
- Explicit organization policies and procedures should be in place for the prevention of VTE.

Applicable Clinical Care Settings

Short- and long-term acute care hospitals, long-term care facilities, and nursing homes.

Safe Practice 29

Every patient on long-term anticoagulants should be monitored by a qualified health professional using a careful strategy to ensure an appropriate intensity of supervision.

Additional Specifications

Explicit organizational policies and procedures should be in place regarding antithrombotic services that include, at a minimum, documentation of:

- indication for long-term anticoagulation;
- target International Normalized Ratio (INR) range;
- duration of long-term anticoagulation and/or a review date;
- a longitudinal record of INR values and warfarin doses; and
- timing of the next INR appointment.

Applicable Clinical Care Settings

This practice is applicable in all care settings.

[8] NQF, *Safe Practices for Better Healthcare: A Consensus Report*, Washington, DC: NQF; 2003.

[9] NQF, *Safe Practices for Better Healthcare: A Consensus Report – 2006 Update*, Washington, DC; NQF; 2007.

Box B – NQF-Endorsed Statement of Organizational Policy, Key Characteristics of Preferred Practices, and Initial Performance Measures

Statement of Policy

Every healthcare organization shall have a written policy appropriate for its scope that is evidence based and that drives continuous quality improvement related to VTE risk assessment, prophylaxis, diagnosis, and treatment.

Key Characteristics of Preferred Practices

General Recommendations

1. ensure that multidisciplinary teams develop institutions' protocols and/or "adopt" established, evidence-based protocols;
2. have in place a documented system for ongoing quality improvement that demonstrates acting on evidence-based guidelines/practices (rationale for departing from guidelines should be documented unless documentation itself is for some reason contraindicated);
3. include provision for risk assessment/stratification, prophylaxis, diagnosis, and treatment;
4. include appropriate quality improvement activity/monitoring for all phases of care with periodic (as defined by institutional policy) assessment of compliance with policies and measures; and
5. provide for a system of provider education that encompasses all aspects of VTE prevention and care, including primary and secondary prevention, risk assessment and stratification, prophylaxis, diagnosis, and treatment.

Risk-Assessment/Stratification Recommendations

1. provide for risk assessments on all patients based on evidence-based institutional policy (institutions have the flexibility to determine how patient risks are assessed/ stratified); and
2. require documentation in the patient's health record that risk assessment/ stratification was completed.

Prophylaxis Recommendations

1. provide for the type and intensity of prophylaxis based on and commensurate with assessment and documentation of risk/benefit and efficacy/safety for the patient; and
2. prophylaxis is based on formal risk assessment and is consistent with nationally accepted, evidence-based measures/guidelines including NQF-endorsed™ Safe Practice 28.

Diagnosis Recommendations

1. include a requirement to establish a diagnosis of VTE using specific objective diagnostic testing in order to justify treatment continued beyond the initial empiric treatment; and
2. include institution-specific algorithm(s) for establishing diagnosis and require the documentation of contraindications if the algorithm(s) is not followed.

Box B – NQF-Endorsed Statement of Organizational Policy, Key Characteristics of Preferred Practices, and Initial Performance Measures (continued)

Treatment and Monitoring Recommendations

1. ensure that anticoagulation is administered safely and that the setting in which anticoagulation occurs is part of the safety consideration;
2. incorporate NQF-endorsed Safe Practice 29;
3. provide for initiation of treatment based on empiric evidence with a high degree of suspicion and assessment of safety concerns that, for continued therapy, is confirmed with objective testing based on facility policy/guidelines (also see Diagnosis);
4. provide for accurate verbal and written patient education appropriate to setting and patient reading levels (that includes some assessment of understanding versus simple documentation—especially important for outpatients);
5. provide for guideline-directed therapy addressing:
   a. initiation and monitoring of heparin and oral anticoagulation therapy, including timing of initial dose, dose and dose schedule, duration of heparin/oral anticoagulation overlap, and total duration of therapy,
   b. appropriate indications for placement and retrieval of an inferior vena cava (IVC) filter,
   c. appropriate indications for thrombolytic therapy and venous embolectomy (includes pulmonary artery embolectomy),
   d. prevention of post-thrombotic syndrome, and
   e. monitoring for the development of and early intervention for chronic thromboembolic pulmonary hypertension; and
6. provide for guideline-directed therapy that addresses care setting transitions.

Initial Performance Measures

Measure Name: Surgery patients with recommended venous thromboembolism (VTE) prophylaxis ordered

Numerator: Surgery patients with recommended VTE prophylaxis ordered during the admission

Denominator: All selected surgery patients

Measure Name: Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery

Numerator: Surgery patients who received appropriate VTE prophylaxis within 24 hours prior to Surgical Incision Time to 24 hours after Surgery End Time

Denominator: All selected surgery patients

healthcare organizations, and presented 2 performance measures. The six endorsed performance measures presented in this report continue to advance the ability of organizations and the public to measure VTE prevention and care improvement in a number of these areas.

Priority Areas for VTE Performance Measurement

The domains and characteristics of the preferred practices identified in the 2006 NQF-endorsed consensus standards established a framework within which to identify performance measures. During that work, NQF, in collaboration with the Joint Commission, issued two "Calls" for performance measures, with the goal of providing measurement tools. Based on its knowledge of the state of VTE measures, NQF had expected that further development and testing of performance measures might be needed and had partnered with the Joint Commission to do that work. Because of the dearth of measures deemed suitable by the VTE expert panels, the Joint Commission was tasked to develop a set of measures de novo. In developing the performance measures, priority was given to measures that would:

- be likely to lead to significant improvement in the prevention and care of VTE;
- build upon NQF-endorsed voluntary consensus standards;
- address priorities for national healthcare quality;
- be suitable for accountability and efficiency;
- relate to prevention, early identification, and treatment; and
- address disparities in care, where possible.

Criteria for the Selection of Consensus Standards

The NQF report *A Comprehensive Framework for Hospital Care Performance Evaluation: A Consensus Report*[10] provided a framework for the evaluation of the candidate consensus standards. The criteria detailed in this report were used to evaluate each performance measure (box C).

[10] NQF, *A Comprehensive Framework for Hospital Care Performance Evaluation: A Consensus Report*, Washington, DC: NQF; 2003.

Box C – Criteria for Inclusion in the Set – Performance Measures

Measures are evaluated for suitability based on four standardized criteria endorsed by NQF in 2003—important, scientifically acceptable, useable, and feasible.

Important. This set addresses the extent to which a measure reflects a variation in quality or low levels of overall performance and the extent to which it captures key aspects of the flow of care.

- The measure addresses one or more key leverage points for improving quality.
- Considerable variation in the quality of care exists.
- Performance in the area (e.g., setting, procedure, condition) is suboptimal, suggesting that barriers to improvement or best practice may exist.

Scientifically acceptable. A measure is scientifically sound if it produces consistent and credible results when implemented.

- The measure is well defined and precisely specified. Measures must be specified sufficiently to be distinguishable from other measures, and they must be implemented consistently across institutions. Measure specifications should provide detail about cohort definition, as well as the denominator and numerator for rate-based measures and categories for range-based measures.
- The measure is reliable, producing the same results a high proportion of the time when assessed in the same population.
- The measure is valid, accurately representing the concept being evaluated.
- The measure is precise, adequately discriminating between real differences in provider performance.
- The measure is adaptable to patient preferences and a variety of contexts of settings. Adaptability depends on the extent to which the measure and its specifications account for the variety of patient choices, including refusal of treatment and clinical exceptions.
- An adequate and specified risk-adjustment strategy exists, where applicable.
- Consistent evidence is available linking the process measures to patient outcomes.

Useable. Usability reflects the extent to which intended audiences (e.g., consumers, purchasers) can understand the results of the measure and are likely to find them useful for decisionmaking.

- The measure can be used by the stakeholder to make decisions.
- The differences in performance levels are statistically meaningful.
- The differences in performance are practically and clinically meaningful.
- Risk stratification, risk adjustment, and other forms of recommended analyses can be applied appropriately.
- Effective presentation and dissemination strategies exist (e.g., transparency, ability to draw conclusions, information available when needed to make decisions).
- Information produced by the measure can/will be used by at least one healthcare stakeholder audience (e.g., public/consumers, purchasers, clinicians and providers, policymakers, accreditors/regulators) to make a decision or take an action.
- Information about specific conditions for which the measure is appropriate has been given.
- Methods for aggregating the measure with other, related measures (e.g., to create a composite measure) are defined, if those related measures are determined to be more understandable and more useful in decision-making. Risks of such aggregation, including misrepresentation, have been evaluated.

Box C – Criteria for Inclusion in the Set – Performance Measures (continued)

Feasible. Feasibility is generally based on the way in which data can be obtained within the normal flow of clinical care and the extent to which an implementation plan can be achieved.

- The point of data collection is tied to care delivery, when feasible.
- The timing and frequency of measure collection are specified.
- The benefit of measurement is evaluated against the financial and administrative burden of implementation and maintenance of the measure set.
- An auditing strategy is designed and can be implemented.
- Confidentiality concerns are addressed.

The NQF-Endorsed National Voluntary Consensus Standards for Prevention and Care of VTE: Additional Performance Measures

The endorsed performance measures presented in this report complement the two measures that were endorsed in 2006 (see box B). The initial set of 19 candidate performance measures was narrowed to 10 based on the outcome of a Joint Commission survey that solicited comments on the initial set. After alpha testing, the list was reduced to 8 measures for beta testing. At each step of the process, the VTE Technical Advisory Panel (appendix B) provided expertise and guidance to the Joint Commission staff, made decisions about the measures to be removed from consideration, and suggested modifications to those measures to be advanced. The six measures endorsed for public reporting (table 1) have been developed and strengthened through public comment, evidence-based and expert opinion, and thorough testing.

Research Recommendations

To continue to advance the care of patients with VTE and the prevention of the disease, research is needed in the areas of risk assessment and appropriateness of therapy. Research also is needed regarding the care of specific patient populations and best practices. In addition to the measures endorsed in this report, the following research recommendations are offered:

1. Continue investigation into risk assessment and the selection of appropriate therapies based on risk assessment, with particular emphasis on the medical population.
2. Conduct additional clinical trials of IVC filter placement as therapy for acute DVT and PE among patients in whom anticoagulant therapy is not possible because of active bleeding or high risk of bleeding, and conduct a clinical trial(s) of IVC filter placement as DVT prophylaxis

in patients who are at very high risk of VTE and in whom anticoagulant-based and intermittent external pneumatic leg compression prophylaxis are not possible because of the high risk of bleeding, active bleeding, or leg long-bone fracture.

3. Further explore VTE-related issues in obstetric and pediatric patients—that is, explore issues related to risk factors and the stratification of high-low risk, incidence of occurrence of VTE in these populations, and appropriate therapies.
4. Conduct additional research into non-pharmacologic/mechanical devices and practices for the prevention of VTE in clinical settings in the medical patient. This research should explore devices and practices in terms of types used, combinations of prophylaxis, and timing and duration of use.

Acknowledgment

This work was supported by a scientific and educational grant from sanofi-aventis with a stipulation that the work would not promote its products.

Table 1 – National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures*

MEASURE	DESCRIPTION
Venous thromboembolism (VTE) prophylaxis	This measure assesses the number of patients who receive VTE prophylaxis or have documentation regarding why no VTE prophylaxis was given within 24 hours of hospital admission or surgery end time.
Intensive care unit (ICU) VTE prophylaxis	This measure assesses the number of patients who receive VTE prophylaxis or have documentation regarding why no VTE prophylaxis was given within 24 hours after the initial admission (or transfer) to the ICU or surgery end time.
VTE patients with overlap of anticoagulation therapy	This measure assesses the number of patients diagnosed with VTE who received parenteral and warfarin therapy for at least five days with an international normalized ratio (INR) greater than or equal to 2 prior to discontinuation of parenteral therapy or discharged in less than five days on both medications.
VTE patients receiving unfractionated heparin (UFH) with dosages/platelet count monitored by protocol (or nomogram)	This measure assesses the number of patients receiving intravenous UFH therapy with documentation that the dosages and platelet counts are monitored by protocol (or nomogram).
VTE discharge instructions	This measure assesses the number of VTE patients who are discharged to home, home care, or home hospice on warfarin with written discharge instructions that address all four criteria: follow-up monitoring, compliance issues, dietary restrictions, and potential for adverse drug reactions/interactions.
Incidence of potentially preventable VTE	This measure assesses the number of patients who were diagnosed with VTE during hospitalization (not present at admission) that did not receive VTE prophylaxis.

*See appendix A for the measure specifications.

Appendix A

Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

The table presented in this appendix summarizes the specifications for each of the National Quality Forum (NQF)-endorsed™ venous thromboembolism performance measures. All information presented has been derived directly from the measure developer without modification or alteration (except when the measure developer agreed to such modification during the NQF Consensus Development Process) and is current as of February 2008. The developer expects to release the full specifications in April 2009.

All NQF-endorsed voluntary consensus standards are open source, meaning they are fully accessible and disclosed.

Appendix A – Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Measure Number/Type	Measure Name	IP Owner	Numerator	Denominator	Denominator Exclusions	Source
VTE-1/Process	**VENOUS THROMBOEMBOLISM PROPHYLAXIS**	The Joint Commission	Patients who received venous thromboembolism (VTE) prophylaxis or have documentation why no VTE prophylaxis was given within 24 hours of hospital admission or surgery end time. Inclusion: Medical and surgical inpatients.	All discharged patients. Inclusion: With inpatient stays ≥48 hours.	Patients: 1) Who are less than 18 years of age 2) With ICD-9-CM Principal Diagnosis Code of Mental Disorders as defined in Appendix A, Table 1.5 3) With ICD-9-CM Principal Diagnosis Code of VTE as defined in Appendix A, Table 1.3 4) With ICD-9-CM Principal or Other Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2 5) With ICD-9-CM Principal Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2a 6) With comfort measures only documented by a physician/advanced practice nurse/physician assistant (physician/APN/PA) 7) That are direct admits or transferred to the intensive care unit (ICU) within 24 hours of hospital admission 8) Involved in VTE-related clinical trials 9) Admitted with VTE, but coded with ICD-9-CM Other Code of VTE as defined in Appendix A, Table 1.3 or Table 1.2a 10) With an ICD-9-CM Principal Procedure Code of Surgical Care Improvement Project (SCIP) VTE selected surgeries (refer to Appendix A, Table 1.4) within 24 hours of admission.	Administrative and medical record data.

(more)

Appendix A – Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Measure Number/Type	Measure Name	IP Owner	Numerator	Denominator	Denominator Exclusions	Source
VTE-2/Process	**INTENSIVE CARE UNIT VENOUS THROMBOEMBOLISM PROPHYLAXIS**	The Joint Commission	Patients who received VTE prophylaxis or have documentation why no VTE prophylaxis was given within 24 hours after the initial ICU admission or transfer to ICU or surgery end time. Inclusion: Medical and surgical inpatients.	Patients directly admitted or transferred to ICU. Inclusions: With inpatient stays ≥48 hours With Revenue Codes of 20X – Intensive Care (any subcategory) or 21X – Coronary Care (any subcategory).	Patients: 1) Who are less than 18 years of age 2) With an ICD-9-CM Principal Diagnosis Code of VTE as defined in Appendix A, Table 1.3 3) With ICD-9-CM Principal or Other Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2 4) With ICD-9-CM Principal Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2a 5) Involved in VTE-related clinical trials 6) Admitted with VTE, but coded with ICD-9-CM Other Code of VTE as defined in Appendix A, Table 1.3 or Table 1.2a 7) With an ICD-9-CM Principal Procedure Code of SCIP VTE selected surgeries (refer to Appendix A, Table 1.4) within 24 hours of admission 8) With comfort measures only documented by a physician/APN/PA.	Administrative and medical record data.

(more)

Appendix A – Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Measure Number/Type	Measure Name	IP Owner	Numerator	Denominator	Denominator Exclusions	Source
VTE-4/Process	**VENOUS THROMBOEMBOLISM PATIENTS WITH OVERLAP OF ANTICOAGULATION THERAPY**	The Joint Commission	Patients who received parenteral *AND* warfarin therapy (overlap therapy): 1) For at least five days, with an INR ≥2 prior to discontinuation of parenteral therapy *OR* 2) For more than five days, with an INR <2, but were discharged on overlap therapy *OR* 3) Who were discharged in less than five days on overlap therapy. Inclusion: Patients who received warfarin *AND* one of the following medications: ■ low-molecular weight heparin (LMWH) ■ intravenous or high-dose subcutaneous unfractionated heparin (UFH) ■ factor Xa inhibitor ■ direct thrombin inhibitors.	VTE patients who received warfarin during hospitalization. Inclusions: 1) With an ICD-9-CM Principal or Other Diagnosis Code of VTE as defined in Appendix A, Table 1.3, except for ICD-9-CM Code of 453.42 2) With an ICD-9-CM Principal or Other Diagnosis Codes of Obstetrics with VTE as defined in Appendix A, Table 1.2a.	Patients: 1) Who are less than 18 years of age 2) Involved in VTE-related clinical trials.	Administrative and medical record data.

(more)

Appendix A – Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Measure Number/Type	Measure Name	IP Owner	Numerator	Denominator	Denominator Exclusions	Source
VTE-6/Process	**VENOUS THROMBOEMBOLISM PATIENTS RECEIVING UNFRACTIONATED HEPARIN WITH DOSAGES/PLATELET COUNT MONITORED BY PROTOCOL (OR NOMOGRAM)**	The Joint Commission	Patients who receive intravenous (IV) UFH with dose managed by nomogram or protocol that includes: Baseline platelet count drawn within 48 hours before initiation of UFH *AND* Repeat platelet count drawn the day following the initiation of UFH *AND* Platelet count drawn at least three non-consecutive days within seven days until day 14 or until UFH is discontinued (whichever is first).	Patients receiving IV UFH. Inclusions: 1) With an ICD-9-CM Principal or Other Diagnosis Code of VTE as defined in Appendix A, Table 1.3 2) With an ICD-9-CM Principal or Other Diagnosis Code of Obstetrics with VTE as defined in Appendix A, Table 1.2a.	Patients: 1) Who are less than 18 years of age 2) Involved in VTE-related clinical trials.	Administrative and medical record data.
VTE-7/Process	**VENOUS THROMBOEMBOLISM DISCHARGE INSTRUCTIONS**	The Joint Commission	VTE patients with documentation that they or their caregivers were given written discharge instructions or other educational material addressing all of the following: ■ Follow-up Monitoring ■ Compliance Issues ■ Dietary Restrictions ■ Potential for Adverse Drug Reactions/Interactions.	VTE patients discharged to home, home care, or home hospice on warfarin therapy. Inclusions: 1) With an ICD-9-CM Principal or Other Diagnosis Code of VTE as defined in Appendix A, Table 1.3 2) With an ICD-9-CM Principal or Other Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2a *AND* A discharge to home or home care.	Patients: 1) Who are less than 18 years of age 2) Involved in VTE-related clinical trials.	Administrative and medical record data.

(more)

Appendix A – Specifications of the National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Additional Performance Measures

Measure Number/Type	Measure Name	IP Owner	Numerator	Denominator	Denominator Exclusions	Source
VTE-8/ Intermediate Outcome	**INCIDENCE OF POTENTIALLY PREVENTABLE VENOUS THROMBOEMBOLISM**	The Joint Commission	Patients who received no VTE prophylaxis prior to VTE diagnosis.	Patients diagnosed with VTE during hospitalization (not present at admission). Inclusions: 1) With an ICD-9-CM Other Diagnosis Code of VTE as defined in Appendix A, Table 1.3 2) With an ICD-9-CM Other Diagnosis Code of Obstetrics with VTE as defined in Appendix A, Table1.2a.	Patients: 1) Who are less than 18 years of age 2) With comfort measures only documented by a physician/APN/PA 3) Involved in VTE-related clinical trials 4) With length of stay <48 hours 5) With an ICD-9-CM Principal Diagnosis Code of VTE as defined in Appendix A, Table 1.3 6) With an ICD-9-CM Principal Diagnosis Code of Obstetrics as defined in Appendix A, Table 1.2a 7) Admitted with VTE, but coded with ICD-9-CM Other Diagnosis Code as defined in Appendix A, Table 1.3 or 1.2a 8) With documented contraindication to pharmacologic and mechanical prophylaxis.	Administrative and medical record data.

Appendix B
Steering Committee, Technical Advisory Panel, and Project Staff

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Appendix C
Commentary

Introduction

This report continues the work presented in the National Quality Forum (NQF) report *National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Policy, Preferred Practices, and Initial Performance Measures – A Consensus Report*, published in 2006. By identifying a set of key characteristics of preferred practices, that document established a set of expectations that this phase of the project has begun to address. This phase has focused solely on the development and testing of performance measures for the prevention and care of venous thromboembolism (VTE) and its component diseases, deep vein thrombosis (DVT) and pulmonary embolism (PE).

To ensure consistency, this work was continued under the guidance of the same Steering Committee and Technical Advisory Panel (TAP) (appendix B) that guided the earlier effort and with the ongoing partnership between NQF and the Joint Commission.

By advancing performance measures that address a number of the characteristics identified in the 2006 report as well as the NQF-endorsed™ Safe Practices 28 and 29, organizations can continue to assess their progress in providing safe and effective VTE prevention and care, and the public can assess progress in the care and prevention of VTE in more specific and reliable ways.

This group of measures was developed specifically to enable organizational quality improvement and public accountability in the domains identified in the earlier work. The measures address key areas of assessment and prophylaxis, treatment and monitoring, and care setting transitions.

The National Voluntary Consensus Standards for Prevention and Care of VTE

Relationship to Other NQF-Endorsed Consensus Standards

This project continues to expand the number of tools available to assist organizations in moving forward to implement appropriate approaches to the prevention and care of VTE. The six endorsed measures provide a means to begin to assess implementation of Safe Practices 28 and 29, which target assessment, prophylaxis, and care management. Additionally, the measures are an extension of, and should be considered a companion to, the policy, characteristics of practices, and performance measures reported in the first phase of this project. The 2006 NQF VTE report established a standardized approach to preventing VTE and improving care for patients diagnosed with VTE.

Priority Areas for VTE Performance Measurement

The domains of prevention and care of VTE identified in the first phase of the project—risk assessment/stratification, prophylaxis, diagnosis, and treatment and monitoring—established the priority areas within which performance measures were developed. An additional overarching priority that remained forefront in the overall, and measure-specific, approach was to avoid causing undue data collection burden.

Criteria for Selection

Because the performance measures advanced in this report were developed specifically for the project, the NQF-endorsed criteria from *A Comprehensive Framework for Hospital Care Performance Evaluation: A Consensus Report*[1] of importance, scientific acceptability, usability, and feasibility were considerations from the outset. These criteria were then specifically assessed by the TAP and the Steering Committee in their consideration of the measures.

The National Voluntary Consensus Standards for Prevention and Care of VTE: Additional Performance Measures

The six endorsed performance measures add to the two surgical prophylaxis measures endorsed in the first phase of this project. As noted in the 2006 NQF report on VTE,[2] NQF anticipated a need for the refinement and testing of performance measures and contracted with the Joint Commission to conduct this work. Phase 2 of the project began in December 2005 with the selection of 19 performance measures that addressed key aspects of VTE prevention and care.

[1] National Quality Forum (NQF), *A Comprehensive Framework for Hospital Care Performance Evaluation: A Consensus Report,* Washington, DC: NQF; 2003.

[2] NQF, *National Voluntary Consensus Standards for Prevention and Care of Venous Thromboembolism: Policy, Preferred Practices, and Initial Performance Measures – A Consensus Report,* Washington, DC: NQF; 2006.

Those 19 measures, posted for comment on the Joint Commission's web site (with a link to the NQF web site) addressed:

- risk assessment 1) at hospital admission and 2) at transfer or direct admission to the intensive care unit (ICU);
- prophylaxis, both 1) non-ICU and 2) ICU;
- diagnosis confirmation;
- documentation related to 1) graduated compression stockings and 2) inferior vena cava (IVC) filter placement;
- treatment and monitoring, including 1) therapeutic International Normalized Ratio (INR) monitoring, 2) warfarin INR monitoring, 3) creatinine clearance, 4) platelet count monitoring, 5) overlap therapy, 6) treatment of discharged cancer patients, 7) unfractionated heparin (UFH) management by nomogram, and 8) treatment duration;
- education in 1) inpatient and 2) outpatient settings; and
- outcome measures related to 1) hospital-associated VTE and 2) postoperative VTE.

Based on an analysis of comments from nearly 600 stakeholders, the TAP recommended combining some measures and removing others from consideration based on a failure to meet one or more of the selection criteria, being out of project scope, or not focusing on highest priorities. TAP deliberations resulted in the identification of 10 measures, each of which required refinements, to move forward to alpha testing. Those 10 measures addressed:

- documentation of risk assessment/ prophylaxis after admission;
- documentation of risk assessment/ prophylaxis after transfer to the ICU;
- documentation of IVC filter indication;
- overlap of anticoagulation therapy;
- treatment with UFH with platelet count monitoring;
- patients with renal insufficiency who received appropriate therapy;
- UFH management by nomogram/ protocol;
- discharge instructions;
- INR result after initiation of warfarin therapy; and
- incidence of potentially preventable, hospital-associated VTE.

Based on alpha testing, 2 of the 10 measures were removed from further consideration, and the TAP recommended refinements to the remaining 8 measures. Those eight measures advanced to a six-month period of pilot testing that commenced in January 2007.

Hospitals selected to participate in pilot testing volunteered subsequent to the Joint Commission's call for volunteers. Of the 106 hospitals that volunteered, 55 were chosen based on characteristics selected to assure a broad sampling, including geographic distribution, size, location, type, and designation. Each hospital was provided orientation to the project, training in the data collection methods, detailed measure specifications, electronic tools for collecting data during the test, and ongoing support. Additionally, through teleconferences and on-site consultations, they were provided education about various aspects of VTE prevention and care by international

experts. Nonetheless, the demands of testing resulted in some attrition; a cadre of 41 hospitals completed the testing. The analysis of data from the abstraction of 5,713 medical records was considered by the TAP in making its recommendations and by the Steering Committee in making final recommendations to advance for endorsement the 7 measures discussed below (of which 6 ultimately were endorsed).

Measures Recommended for Public Reporting

VTE-1: VTE Prophylaxis

VTE-1 has a broad focus; it includes hospitalized patients (excluding those under age 18, those hospitalized for behavior disorders, obstetrical patients, those being treated for VTE, and those receiving comfort measures only). Exclusion of those receiving comfort measures only makes the measure consistent with those of other inpatient national projects and keeps the denominator population clean, although the TAP recognized that there are patients in the excluded populations who have risks. It was the TAP's position that, based on the expectations set in Phase 1 of this project, hospitals should have protocols to address patients receiving comfort measures only.

This measure as tested required documentation of risk assessment and prophylaxis within 24 hours of hospital admission. The most important of the measure refinements was to first permit a determination of whether prophylaxis was given and, if not, to then determine whether there is documentation regarding why it was not given. Based on the fact that no risk assessment protocol(s) have been validated in clinical trials, the TAP determined that the goal of the measure should be to provide prophylaxis to patients. In part, this determination credits hospitals by assuming they have policies in place that require that patients either receive prophylaxis or that there be some form of risk assessment in the patients' charts regarding why it is not given. Furthermore, this approach simplifies data collection and facilitates abstraction.

The primary weakness of the measure is that it does not measure the appropriateness of the prophylaxis. Because adequate evidence is not available related to what constitutes appropriate prophylaxis, especially for the medical patient, the TAP opined that whatever prophylaxis was given should be accepted. Noting that the NQF-endorsed Surgical Care Improvement Project (SCIP) VTE measures include procedure-specific prophylaxis, the TAP decided that advancing a measure primarily focused on medical patients that requires prophylaxis to be given or the documentation of a reason why it is not given would advance prophylaxis, and with it, the effort to investigate and use appropriate forms of prophylaxis. In concluding its discussion of this measure, the Steering Committee was cautioned by some of its members that considering risk assessment and appropriateness of therapy should remain an important part of the measure consideration process, either by revisiting the issues going forward or by recommending additional research in these areas. The measure was recommended contingent on having an exclusion for direct admission to the ICU. The measure developer agreed to this exclusion.

VTE-2: Intensive Care Unit VTE Prophylaxis

The goals, advantages, weaknesses, and challenges of this measure, in general, parallel those of VTE-1. The TAP and Steering Committee believed that a measure focused on the reassessment of patients during hospital stays should be included in the group of measures advanced. This resulted in part from the desire to reinforce the reassessment expectation included as part of Safe Practice 28. Both the TAP and the Steering Committee agreed that a transfer to the ICU typically is occasioned by a clinical status change, making transfer an especially appropriate time for reassessment. Challenges inherent in refining the measure include identifying how to determine easily from readily available documentation when a patient is transferred to the ICU, as well as the number of times a patient is transferred, because the measure looks only for the first transfer. Currently, the standard way in which ICU admission, for intensive care services, can be most easily discerned is through use of ICU revenue codes. The Committee acknowledged that patients not admitted to the ICU who received intensive care services elsewhere will not be captured. The primary weakness of the measure is that the appropriateness of prophylaxis is not specified, and for the medical patient, it cannot be specified based on existing evidence. The measure, like VTE-1, was refined to capture prophylaxis for patients who are transferred to the ICU or who are directly admitted to the ICU. In the case of admission, VTE-1 and VTE-2 populations are exclusive. The Steering Committee noted that the specificity around prophylaxis selection in VTE-1 and VTE-2 will evolve through measure maintenance as the science evolves.

VTE-4: VTE Patients with Overlap of Anticoagulation Therapy

The purpose of this measure is to evaluate overlap of treatment of hospital patients who are receiving warfarin and heparin or low molecular weight heparin (LMWH). Medical guidelines recommend that patients receive a parenteral anticoagulant in addition to warfarin with five days of overlap and that they be at a therapeutic level on warfarin with an INR ≥2 before the parenteral therapy is discontinued. As originally specified, continuous days of administration of treatment overlap was required; that requirement resulted in low performance as patients' INRs became elevated to the point that therapy was held temporarily. The measure was respecified to look at calendar start and stop dates searching for five days of therapeutic overlap as opposed to five continuous days of therapy. This approach simplifies data collection and assesses for the desired condition—that is, that the INR is ≥2 before parenteral therapy is stopped or that patients go home on parenteral therapy. Using start and stop dates also simplifies data collection. As refined, the numerator specifies that patients receive parenteral AND warfarin therapy for at least five days from the date warfarin is started, with an INR ≥2 prior to the discontinuation of parenteral therapy or for more than five days with an INR ≤2, but discharged on overlap therapy or discharged in less than five days on overlap therapy.

VTE-6: VTE Patients Receiving UFH with Dosages/ Platelet Count Monitored by Protocol or Nomogram

During pilot testing, two measures were tested that assessed use of unfractionated heparin (UFH), including VTE-5, which assessed patients receiving UFH who had platelet count monitoring. The performance rate for VTE-5 was very low, because,

although institutions had protocols in use, those protocols did not require monitoring every other day, even though they did specify non-consecutive days. VTE-6 focused on patients with acute VTE receiving intravenous (IV) UFH managed by nomogram. For simplicity, the two measures were combined to assess whether the patient with acute VTE receiving IV UFH is monitored by a protocol or nomogram that includes dosage adjustment by nomogram and platelet count monitoring no less than three non-consecutive days per week. This approach is less rigorous than the one recommended by the guidelines, but the TAP believed, and the Steering Committee concurred, that the strength of the evidence for monitoring every other day allowed some latitude.

The Steering Committee discussed the importance of platelet count monitoring with use of LMWH or with high-dose subcutaneously (SQ) administered UFH. Because this project is hospital specific and LMWH is primarily used with outpatients, its use was not incorporated into the measure initially and no data related to LMWH were collected. Its inclusion post-testing would have required a respecified measure or a test measure, field testing, and bringing such a measure forward at a later date. SQ heparin was not carried forward when VTE-5 and VTE-6 were merged. A brief discussion of the rationale for the consolidation of the two measures revealed that their merger would permit the monitoring of the measure through the assessment of a protocol in patient charts that requires routine platelet count monitoring rather than a more labor-intensive abstraction process. The Committee recommended moving the measure forward without the addition of other treatments. It also recommended that the numerator be refined to patients who receive IV UFH managed by nomogram or by a protocol that includes a baseline platelet count drawn within 48 hours before initiation of treatment and a platelet count the day after heparin is initiated and then monitored at least three non-consecutive days a week. The developer agreed with this refinement.

VTE-7: VTE Discharge Instructions

Although this measure is hospital focused, it addresses care coordination across settings, because the denominator includes patients discharged to home, home care, and home hospice on warfarin therapy. It is limited to warfarin therapy to assure a clean denominator. All parties involved in developing the measure agreed that this denominator requires clear instructions. The educational components are aligned with the Joint Commission's 2008 National Patient Safety Goals, which recommend follow-up monitoring, compliance, dietary restrictions, and education about the potential for adverse drug reactions or interactions. Performance rates during the pilot were less than 10 percent because of strict chart documentation criteria that included use of graduated compression stockings (GCS). The rate went up to 24 percent when GCS were removed, making implementation more feasible and leaving a significant margin for improvement. Steering Committee discussion centered on the definition of compliance (taking medication regularly and keeping follow-up appointments) and the importance of communicating discharge instructions to all patient populations and working to overcome cultural barriers. During voting, comments were made that careful consideration must be given to how to implement this measure in a meaningful manner, as well as how to revise the measure to ensure the quality of education. Consideration regarding the data collection burden

balanced against expected institutional integrity resulted in the measure as stated. The developer agreed to continue to consider potential criteria regarding the quality of education as part of its maintenance effort.

VTE-8: Incidence of Potentially Preventable VTE

This intermediate outcome measure is meant to capture confirmed VTE diagnosed during a hospital stay, not present on admission, and for which no VTE prophylaxis had been received prior to diagnosis. The incidence rate for this measure should be a low percentage. During the Joint Commission reliability testing, it was noted that a significant percentage of the incidence attributed to potentially preventable VTE was present on admission (POA). This will be addressed by an exclusion for POA that can be captured by POA codes that all hospitals started using in 2008. It is expected that this measure will stimulate assessment of the patient's need for prophylaxis that will reduce hospital-associated VTE development outcomes. Additionally, because the denominator includes some populations excluded from other measures, the Committee expected that, as a by-product of the measure, hospitals will assess risks and provide prophylaxis for those populations. Although data abstraction time for the measure is relatively high, the number of cases requiring data abstraction should be low. Abstraction burden relies in part on the documentation of "conditions diagnosed during admission but clearly present before admission," including conditions identified by symptom or a "rule-out" diagnosis. A significant portion of the Steering Committee discussion centered on the exclusion of the mental health and obstetrics populations from the numerator, consistent with the logic regarding VTE-1 and VTE-2 as related to the evidence. The group agreed that the incidence of potentially preventable VTE should be captured in these populations and that the analysis of the measure results could be stratified to provide information about the entire population as well as those represented in VTE-1 and VTE-2. The measure was recommended contingent on a change to the numerator that would remove the exclusions for mental health and obstetrics patients. The developer agreed to these changes. During voting, a request was made to exclude patients from the denominator who have documented contraindications to pharmacologic and mechanical prophylaxis. The developer also agreed to this change. Additionally a request was made to exclude patients who are appropriately risk assessed at low to no risk but who go on to develop VTE in the hospital; the determination was made that this was not an appropriate exclusion.

Measure Recommended for Quality Improvement Only

Measure VTE-3: IVC Filter Indication

This measure was challenging in terms of framing the specifications. There were a number of issues discussed regarding the use of filters: 1) there are no data to support IVC filter use for prophylaxis, although there is some consensus for the use of IVC filters in the treatment of patients who have known thrombosis and contraindications to anticoagulation; 2) filters increase complications; 3) only about half of retrievable filters are retrieved, which puts patients at risk of long-term complications; 4) absent data for or against use of filters for prophylaxis, some who might benefit may not receive the filters in the face of this measure. The tested measure looked for patients who had filters placed and then looked only for documentation of any reason for filter placement. In the group of testing hospitals,

almost 12 percent of them had no indication documented, and, for those with documentation, the range was broad. The options for this measure that were considered by the TAP and the Steering Committee included 1) moving it forward as tested; 2) dropping it; or 3) changing it to include the American College of Chest Physicians (ACCP) accepted indications, with an appreciation that targeted performance rates would not be 100 percent. Based on a desire to look at the appropriateness of indications to begin to drive performance toward improvement by trying to reduce the inappropriate use of filters, the numerator was refined to include the ACCP recommended indications. Reservations about the measure included concerns that the measure might inhibit the appropriate use of the filters in trauma patients, including those in the military and that the measure may be perceived as focusing on collecting data more than improving care. The Steering Committee recommended advancing the measure for quality improvement contingent on changing the numerator to include, as indications for use of a filter, 1) acute (defined as within one month) proximal DVT or acute PE and documentation that anticoagulant therapy is contraindicated because of the risk of bleeding or active bleeding and 2) chronic thromboembolic pulmonary hypertension. The developer agreed to these changes.

In some ways, advancing a measure for internal quality improvement is unusual in the existing environment; however, the incidence of placement of IVC filters in the absence of evidence of efficacy and in the face of potential long-term complications and the fact that many, if not the majority, of retrievable filters are not retrieved, this measure was deemed important by the Steering Committee to help facilities quantify and analyze IVC filter placement for internal quality improvement. Within the NQF Councils, voting on this measure ranged from 44 percent approval to 100 percent approval. The ACCP expressed concern that the measure would not meet its embargoed guidelines. The developer agreed that routine maintenance of the measure would assure that guidelines would be met once they are released. Ultimately, the measure was not endorsed, based on the fact that it does not meet requirements for, and was not advanced for, public reporting.

Research Recommendations

Research recommendations were considered throughout the discussion of the measures. During the discussions of VTE-1 and VTE-2, the inability to include in the measures specific recommendations of therapies for medical conditions based on risk prompted a recommendation for research into differential selection of therapies. Concerns related to the use of IVC filters, including appropriate indications for use and patient selection, resulted in a recommendation to conduct specific clinical trials. The recommendation related to the obstetric and pediatric populations was driven by the fact that the unique needs of these patients have not been explored fully, with the result that prophylaxis and treatment are not well defined and that as a result, staff who care for these patients in the hospital are not properly prepared to anticipate VTE and intervene when it occurs. The dearth of evidence related to the use of non-pharmacologic or mechanical devices for VTE prevention either alone or in combination with pharmaceuticals, particularly with the medical patient, resulted in the fourth research recommendation.

Appendix D
Consensus Development Process: Summary

The National Quality Forum (NQF) is a unique, multistakeholder organization dedicated to improving healthcare quality through performance measurement and public reporting. NQF's Consensus Development Process (CDP) is the formal process through which it achieves consensus on the standards it endorses, including performance measures and other standards to improve healthcare quality.

Through this multistep process, NQF brings together diverse healthcare stakeholders who are represented in eight Member Councils: Consumer Council; Purchaser Council; Health Professional Council; Provider Organization Council; Supplier and Industry Council; Quality Measurement, Research, and Improvement Council; Health Plan Council; and Public/Community Health Agencies Council.

Members of the public with particular expertise in a given topic also may be invited to participate in the early identification of draft consensus standards, either as technical advisors or as Steering Committee members. In addition, the NQF process explicitly recognizes a role for the general public to comment on proposed consensus standards and to appeal healthcare quality consensus standards endorsed by NQF. Information on NQF projects, including information on NQF meetings open to the public, is posted at www. qualityforum.org.

NQF's CDP process begins with the formation of a Steering Committee that guides the project and that includes critical expertise and represents a balance of perspectives on the matter(s) under consideration. The purpose of the Steering Committee is to develop and carry out, in conjunction with NQF staff and technical advisors, as needed, a work plan that will result in a recommended product for endorsement by NQF membership, the Consensus Standards Approval

Committee (CSAC), and the NQF Board of Directors. Priority will be given to nominations for Steering Committees members that are made by NQF Members.

The next step involves a "Call for Measures." NQF invites the owners or stewards of performance measures or other types of candidate standards to submit their measures for consideration. Organizations do not need to be NQF Members to participate. Once NQF issues a "Call for Measures," organizations have 30 days to submit the requisite information. Organizations are asked to adhere to NQF Measure Submission Guidelines and must agree to provide free, public access to measures, including technical specifications, if they are endorsed by NQF.

The proposed consensus standards are distributed for review and comment by NQF Members and non-members. After NQF review and comment of the candidate consensus standards, member organizations are provided with a revised draft, on which they generally have 30 days to vote. Each organization has one vote.

Next, the candidate consensus standards and the voting results are submitted to the CSAC to consider in making its decision. Although the CSAC makes most of the final decisions regarding approval, on occasion, it may defer decisionmaking and request additional consensus building, and Member Council chairs are given an opportunity to provide input. As is the case with the Board of Directors, consumers and those who purchase services on their behalf constitute a simple majority on the CSAC.

After approval by the CSAC and ratification by the Board of Directors, NQF Members and non-members are provided 30 days to file an appeal. All appeals are reviewed by the CSAC and are forwarded with their recommendation to the Board of Directors for final consideration.

Once a set of voluntary consensus standards has been approved, the federal government may utilize it for standardization purposes in accordance with the provisions of the National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) and the Office of Management and Budget Circular A-119. Consensus standards are updated as warranted.

For this report, the NQF CDP, version 1.8, was in effect. The complete process can be found at www.qualityforum.org.

The National Quality Forum (NQF) is a private, nonprofit, open membership, public benefit corporation whose mission is to improve the American healthcare system so that it can be counted on to provide safe, timely, compassionate, and accountable care using the best current knowledge. Established in 1999, NQF is a unique public-private partnership having broad participation from all parts of the healthcare industry. As a voluntary consensus standard-setting organization, NQF seeks to develop a common vision for healthcare quality improvement, create a foundation for standardized healthcare performance data collection and reporting, and identify a national strategy for healthcare quality improvement. NQF provides an equitable mechanism for addressing the disparate priorities of healthcare's many stakeholders.

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