National Quality Forum

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized): Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) NQF Review #: 1519 NQF Project: Surgery Endorsement Maintenance 2010

<table>
<thead>
<tr>
<th>MEASURE DESCRIPTIVE INFORMATION</th>
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</thead>
<tbody>
<tr>
<td><strong>De.1 Measure Title:</strong> Statin Therapy at Discharge after Lower Extremity Bypass (LEB)</td>
</tr>
<tr>
<td><strong>De.2 Brief description of measure:</strong> Percentage of patients aged 18 years and older undergoing infrainguinal lower extremity bypass who are prescribed a statin medication at discharge. This measure is proposed for both hospitals and individual providers.</td>
</tr>
<tr>
<td><strong>1.1-2 Type of Measure:</strong> Process</td>
</tr>
<tr>
<td><strong>De.3 If included in a composite or paired with another measure, please identify composite or paired measure NA</strong></td>
</tr>
<tr>
<td><strong>De.4 National Priority Partners Priority Area:</strong> Population health, Safety</td>
</tr>
<tr>
<td><strong>De.5 IOM Quality Domain:</strong> Effectiveness, Patient-centered</td>
</tr>
<tr>
<td><strong>De.6 Consumer Care Need:</strong> Getting better</td>
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</tbody>
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<tr>
<th>CONDITIONS FOR CONSIDERATION BY NQF</th>
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<tbody>
<tr>
<td>Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:</td>
</tr>
<tr>
<td><strong>A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.</strong></td>
</tr>
<tr>
<td><strong>A.1 Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)? Yes</strong></td>
</tr>
<tr>
<td><strong>A.2 Indicate if Proprietary Measure (as defined in measure steward agreement):</strong></td>
</tr>
<tr>
<td><strong>A.3 Measure Steward Agreement: Agreement will be signed and submitted prior to or at the time of measure submission</strong></td>
</tr>
<tr>
<td><strong>A.4 Measure Steward Agreement attached: Agreement With Measure Stewards_Agreement Between_National Quality Forum (12-6-2010)-634278516835518374.pdf</strong></td>
</tr>
</tbody>
</table>

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable
### B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years.  
Yes, information provided in contact section

### C. The intended use of the measure includes both public reporting and quality improvement.  
**Purpose:** Payment Program

### D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement.

1. **Testing:** Yes, fully developed and tested
2. **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes

(for NQF staff use) Have all conditions for consideration been met?  
Staff Notes to Steward (if submission returned):

Staff Notes to Reviewers (issues or questions regarding any criteria):

Staff Reviewer Name(s):

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**TAP/Workgroup Reviewer Name:**

**Steering Committee Reviewer Name:**

### 1. IMPORTANCE TO MEASURE AND REPORT

Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. **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**

(for NQF staff use) **Specific NPP goal:**

**1a.1 Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Frequently performed procedure, High resource use, Severity of illness, Patient/societal consequences of poor quality

**1a.2**

**1a.3 Summary of Evidence of High Impact:** Patients who present with lower extremity ischemia bear a large systemic burden of atherosclerotic disease, and therefore face not only the immediate risk of limb loss but also an increased risk for cardiovascular events. The benefits of statin therapy for cardiovascular risk reduction in the PAD population have been demonstrated in several studies, most notably the Heart Protection Study. The Heart Protection Study (HPS) is the largest trial to assess the effects of statins on major morbidity and mortality. The investigators enrolled over 20,000 patients deemed to be at high risk for cardiovascular events and randomized them to receive either 40mg of simvastatin or placebo. On survival analysis, they demonstrated that treatment with a statin was significantly associated with a decrease in all-cause mortality (12.9% vs. 14.7%, p=.0003) and that this effect was primarily driven by the reduction in death from vascular causes (7.6% vs. 9.1%, p<.0001). A recently published subgroup analysis focusing specifically on patients with documented PAD (n=6748) did not include mortality data. However, the authors demonstrated a significant reduction in the rate of first major vascular event in the simvastatin treatment arm (relative reduction of 22%; p<.0001), when compared to placebo.

The PREVENT III trial was a prospective, randomized, double-blinded, multicenter trial designed to examine the efficacy of a novel pharmacologic agent (edifoligide) in preventing autogenous vein graft failure in 1404
patients who underwent infrainguinal vein bypass at 83 hospitals exclusively for the treatment of critical limb ischemia. This LEB trial, with its high-risk critical limb ischemia (CLI) population, provides another relevant database for examination of the role of statins. The salient finding from this study is that the use of statin drugs was associated with a significant one-year survival benefit in patients undergoing surgical bypass for CLI. The Kaplan-Meier analysis also suggested that the benefit continues to increase with time, and might be even greater with longer term follow-up. In these 1404 patients, those not receiving statins experienced a 40% increase in the risk of death at one year. This effect was demonstrated both in the propensity score weighted analysis (HR 1.40, CI 1.02-1.92), and in the Cox proportional hazards model (HR 1.47, CI 1.11-1.96). These findings are consistent with prior observational studies that have examined the effects of statins, albeit, in heterogeneous PAD populations. The largest of these observational studies, conducted by Feringa and colleagues, enrolled 1374 patients with PAD and followed them for a mean duration of 6.4 years. The authors demonstrated a strong independent association between statin use and all-cause mortality (HR 1.41 for non-users, p<0.0001).

The DECREASE study randomized 497 patients who had not previously been treated with a statin to receive either 80 mg of extended-release fluvastatin or placebo once daily before undergoing major non-cardiac vascular surgery. On evaluation of the primary endpoint, statin therapy conferred a 45% decreased hazard ratio (10.8% versus 19%, p=0.01) for perioperative myocardial infarction. Furthermore, death from cardiovascular causes or myocardial infarction occurred in 4.8% of patients in the fluvastatin group and 10.1% of patients in the placebo group (hazard ratio, 0.47; 95% CI, 0.24 to 0.94; p= 0.03). Fluvastatin therapy was not associated with a significant increase in the rate of adverse events. Several additional studies in patients undergoing LEB have shown similar reductions in perioperative morbidity and mortality associated with statin use.

Recent studies have also demonstrated a specific benefit in graft patency after LEB in patients on statin therapy. Abbruzzese et al observed that statin use was associated with improved secondary patency (3-fold increased risk compared to non-users) among 197 patients who had undergone lower extremity bypass using saphenous vein, in a single-center retrospective analysis.

Citations for Evidence of High Impact:

been collected on 3,693 patients who have undergone LEB. Unpublished analyses of these data demonstrate the Vascular Study Group of New England (VSGNE) therapy prior to surgery and only 45% of patients were prescribed statin therapy on hospital discharge. In however, a significant percentage of patients undergoing lower extremity bypass are not on statin therapy statins, PAD guidelines recommend that all PAD patients be treated, independent of LDL level. Current guidelines support the use of statin therapy in all PAD patients with a target LDL level of less than 100 mg/dL (<70 mg/dL for patients deemed at very high risk). Because of the pleiotrophic effects of statins, PAD guidelines recommend that all PAD patients be treated, independent of LDL level. However, a significant percentage of patients undergoing lower extremity bypass are not on statin therapy before or after surgery. In the PREVENT III trial referenced above, only 46% of patients were on statin therapy prior to surgery and only 45% of patients were prescribed statin therapy on hospital discharge. In the Vascular Study Group of New England (VSGNE), a multicenter quality improvement consortium, data has been collected on 3,693 patients who have undergone LEB. Unpublished analyses of these data demonstrate...
that only 41% of patients were taking statins preoperatively before LEB in 2004. Through quality improvement efforts, this percentage of patients discharged on statins has increased to 79% during the first 6 months of 2010. However, this rate of statin use falls significantly short of the 90% goal set forth by this quality improvement group in 2008. This under-treatment of patients with PAD has been echoed by several other reports in the literature and provides substantial opportunity for improvement. 19-21

Patients undergoing infrainguinal LEB in VSGNE were analyzed for this measure submission. There are 2496 patients in the registry who underwent infrainguinal LEB between 2003-2010. Of these, 2% died in hospital. Of those discharged alive, only 2% were intolerant to statins. Across 13 hospitals, the median statin prescribed at discharge rate was 73%, with an interquartile range of 69% to 80%. Across 63 individual providers, the median statin prescribed at discharge rate was 75%, with an interquartile range of 66% to 84%. SVS and VSGNE have set quality targets at 90%. These data demonstrate both significant variation and a significant performance gap.

1b.3 Citations for data on performance gap:
17. Henke PK, Blackburn S, Proctor MC, Stevens J, Mukherjee D, Rajagopalin S, et al. Patients undergoing infrainguinal bypass to treat atherosclerotic vascular disease are underprescribed


1b.4 Summary of Data on disparities by population group:
There are not published data regarding disparities in statin usage after infrainguinal bypass in different population groups. Such data will become available if this measure is adopted for reporting and used by more centers with more varied population demographics than found in the New England region.

1b.5 Citations for data on Disparities:
None found

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population): As summarized above, this quality measure will be associated with decreased perioperative morbidity and mortality from major adverse cardiac events including stroke, myocardial infarction, and death in patients undergoing lower extremity bypass. The data also suggest a potential association between perioperative statin use and improved bypass graft patency.

1c.2-3. Type of Evidence: Cohort study, Observational study, Evidence-based guideline, Randomized controlled trial, Expert opinion, Meta-analysis

1c.4 Summary of Evidence (as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome):
Please see the summary of the data presented in 1.a.3.

1c.5 Rating of strength/quality of evidence (also provide narrative description of the rating and by whom):
Level 1.

1c.6 Method for rating evidence: Data obtained from randomized prospective controlled trials.
2. Randomized trial of the effects of cholesterol-lowering with simvastatin on peripheral vascular and other major vascular outcomes in 20,536 people with peripheral arterial disease and other high-risk conditions. J Vasc Surg 2007;45:645-54

1c.7 Summary of Controversy/Contradictory Evidence: None
2. Randomized trial of the effects of cholesterol-lowering with simvastatin on peripheral vascular and other major vascular outcomes in 20,536 people with peripheral arterial disease and other high-risk conditions. J Vasc Surg 2007;45:645-54; discussion 53-4.

1c.9 Quote the Specific guideline recommendation (including guideline number and/or page number):
Recommendation #2, Section B1.2.3 (Dormandy et al.)
"In symptomatic PAD patients, statins should be the primary agents to lower LDL cholesterol levels to reduce the risk of cardiovascular events (1)."

Section 2.6.1.1. (Hirsch et al)
“Treatment with a hydroxymethyl glutaryl (HMG)coenzyme-A reductase inhibitor (statin) medication is indicated for all patients with PAD to achieve a target LDL cholesterol level of less than 100 mg per dL. (Level of Evidence: B)
1. Treatment with an HMG coenzyme-A reductase inhibitor (statin) medication to achieve a target LDL cholesterol level of less than 70 mg per dL is reasonable for patients with lower extremity PAD at very high risk of ischemic events. (Level of Evidence: B)"


1c.11 National Guideline Clearinghouse or other URL: NA

1c.12 **Rating of strength of recommendation** (also provide narrative description of the rating and by whom):
NA

1c.13 **Method for rating strength of recommendation** (If different from USPSTF system, also describe rating and how it relates to USPSTF):
NA

1c.14 **Rationale for using this guideline over others:**
This quality measure will be associated with decreased perioperative morbidity and mortality from major adverse cardiac events including stroke, myocardial infarction, and death, in patients undergoing lower extremity bypass.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report*?

<table>
<thead>
<tr>
<th>Rationale:</th>
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<tbody>
<tr>
<td>NA</td>
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2. **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](#))

2a. **MEASURE SPECIFICATIONS**

2a.1 **Numerator Statement** (Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome):
Patients undergoing infrainguinal lower extremity bypass who are prescribed a statin medication at discharge.

2a.2 **Numerator Time Window** (The time period in which cases are eligible for inclusion in the numerator):
Since hospitals have sufficient annual volume to generate accurate reporting levels, these are proposed for reporting every 12 months for hospital. Since surgeons have lower individual volume, we recommend annual reporting of the last 50 consecutive procedures, which may span more than one year, with suppression if < 10 procedures (ie, reported as too low volume to report).

2a.3 **Numerator Details** (All information required to collect/calculate the numerator, including all codes, logic, and definitions):
ANY registry that includes anatomic details or CPT procedure codes is required to identify patients for numerator inclusion. The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) and the Vascular Study Group of New England (VSGNE)are examples of registries capture detailed anatomic information, but the measure is not limited to these registries. Infrainguinal lower extremity bypass is defined as a bypass beginning at or below the external iliac artery and extending into the ipsilateral leg. It includes procedures with CPT codes 35656, 35556, 35583, 35666, 35566, 35585, 35671, 35571, 35587. The numerator is calculated as the number of patients age 18 and over undergoing such a procedure who are prescribed a statin medication at the time of discharge, which is also captured in the above registries.

2a.4 **Denominator Statement** (Brief, text description of the denominator - target population being

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Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable
All patients aged 18 years and older undergoing lower extremity bypass as defined above who are discharged alive, excluding those patients who are intolerant to statins.

2a.5 **Target population gender:** Female, Male  
2a.6 **Target population age range:** 18 years or older

2a.7 **Denominator Time Window** *(The time period in which cases are eligible for inclusion in the denominator)*:  
Since hospitals have sufficient annual volume to generate accurate reporting levels, these are proposed for reporting every 12 months for hospital. Since surgeons have lower individual volume, we recommend annual reporting of the last 50 consecutive procedures, which may span more than one year, with suppression if < 10 procedures (ie, reported as too low volume to report).

2a.8 **Denominator Details** *(All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions)*:  
ANY registry that includes anatomic details or CPT procedure codes is required to identify patients for denominator inclusion. The Society for Vascular Surgery Vascular Quality Initiative and the Vascular Study Group of New England are examples of registries that capture detailed anatomic information, but the measure is not limited to these registries. Infrainguinal lower extremity bypass is defined as a bypass beginning at or below the external iliac artery and extending into the ipsilateral leg. It includes procedures with CPT codes 35656, 35556, 35583, 35666, 35566, 35585, 35671, 35571, 35587. Only patients who are discharged alive are included in the denominator, and patients who are intolerant to statins are excluded, as described below.

2a.9 **Denominator Exclusions** *(Brief text description of exclusions from the target population)*: Chart documentation that patient was not an eligible candidate for statin therapy due to known drug intolerance, or patient died before discharge.

2a.10 **Denominator Exclusion Details** *(All information required to collect exclusions to the denominator, including all codes, logic, and definitions)*:  
Chart documentation that patient was not an eligible candidate for statin therapy due to known drug intolerance, or patient died before discharge. These data are captured in the SVS VQI and VSGNE registries.

2a.11 **Stratification Details/Variables** *(All information required to stratify the measure including the stratification variables, all codes, logic, and definitions)*: Not required

2a.12-13 **Risk Adjustment Type:** No risk adjustment necessary

2a.14 **Risk Adjustment Methodology/Variables** *(List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method)*:  
NA

2a.15-17 **Detailed risk model available Web page URL or attachment:**

2a.18-19 **Type of Score:** Rate/proportion  
2a.20 **Interpretation of Score:** Better quality = Higher score

2a.21 **Calculation Algorithm** *(Describe the calculation of the measure as a flowchart or series of steps)*:  
All patients age 18 and older undergoing infrainguinal LEB who were prescribed statin at discharge divided by (all patients over 18 undergoing infrainguinal LEB minus those intolerant to statins minus those who died before discharge).

2a.22 **Describe the method for discriminating performance** *(e.g., significance testing)*:  
Standard statistical comparison of rates to provide confidence levels to discriminate meaningful differences from the mean.

2a.23 **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))*:  
NA

2a.24 **Data Source** *(Check the source(s) for which the measure is specified and tested)*
Electronic Clinical Data : Registry

2a.25 Data source/data collection instrument (Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.): The Society for Vascular Surgery Vascular Quality Initiative Registry The Vascular Study Group of New England Registry

2a.26-28 Data source/data collection instrument reference web page URL or attachment: Attachment Infra-Inguinal_Bypass_v1.9.xls

2a.29-31 Data dictionary/code table web page URL or attachment: Attachment LEB defs v.01.09.doc

2a.32-35 Level of Measurement/Analysis  (Check the level(s) for which the measure is specified and tested) Clinician : Group/Practice, Clinician : Individual, Facility

2a.36-37 Care Settings (Check the setting(s) for which the measure is specified and tested) Hospital/Acute Care Facility

2a.38-41 Clinical Services (Healthcare services being measured, check all that apply) Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample (description of data/sample and size): A random sample of 100 patient records representing 5 procedures relevant to the measure from 5 different hospitals based on data collected during the past 2 years. In addition, in-hospital mortality was examined by claims based analysis of 7,205 patients discharged and recorded in the VSGNE registry between 2003 to 2007.

2b.2 Analytic Method (type of reliability & rationale, method for testing): A nurse abstractor completed a form based on medical record review for the variables relevant to this measure. The results of this chart review were then compared with the original registry data. The Kappa statistic was used to judge reliability of the data. For mortality validation, claims data from each of 12 hospitals were matched to patient identified data within the VSGNE registry to compare discharge status (alive vs. dead). Any discrepancies were then further evaluated based on a medical record audit.

2b.3 Testing Results (reliability statistics, assessment of adequacy in the context of norms for the test conducted): The key variables for this measure and testing results were:

1. Correct procedure (infrainguinal lower extremity bypass) performed. Kappa =1.0
2. Statin prescribed at discharge: Kappa=.80 (.11 SE)
3. Hospital mortality: Kappa = .91 (SE .01)
4. Age: 100% agreement, Kappa = 1.0 for age 18 or older categories.
5. Intolerant to statins: Kappa = 1.0

2c. Validity testing

2c.1 Data/sample (description of data/sample and size): See reliability testing

2c.2 Analytic Method (type of validity & rationale, method for testing): The validity testing of statin prescribed at discharge used the medical record as the gold standard. Discharge medications are routinely and carefully documented in both the discharge summary and discharge orders. The medication list on both the discharge summary and discharge orders were compared to confirm validity.
Patient age and hospital mortality have face validity. Correctness of operation type compared the operative report as the gold standard with the progress note in the medical record.

Data collected over time in VSGNE have been compared to published literature.

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted):*

100% agreement was found between statin prescribed at discharge on the discharge summary and discharge orders. 100% agreement was also found between the procedure type reported in the operative note and that recorded in the daily progress notes.

Discharge statin use has been tracked in VSGNE for these procedures since 2003. Under a quality program, the proportion of patients discharged on statins has gradually improved, providing validity for this measurement.

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The only exclusions are patients who died before discharge, and patients intolerant to statins, as documented in the medical record. Such patients cannot receive statins.

2d.2 Citations for Evidence:
face validity

2d.3 Data/sample *(description of data/sample and size):* 2496 patients in the registry who underwent infrainguinal LEB between 2003-2010 in VSGNE, all patients in registry for this procedure

2d.4 Analytic Method *(type analysis & rationale):*
Rate determination

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses):*
2% patients died in hospital
2% were alive but intolerant to statins
Of the remaining, 73% were discharged on statins.
Across 13 hospitals, the median statin prescribed at discharge rate was 73%, with an interquartile range of 69% to 80%. Across 63 individual providers, the median statin prescribed at discharge rate was 75%, with an interquartile range of 66% to 84%.

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size):* Not required for this process measure.

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale):*
NA

2e.3 Testing Results *(risk model performance metrics):*
NA

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: NA

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size):* see section 1.b.3 and above 2,d,5

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale):*
Standard statistical analysis to determine 95% confidence interval for hospitals and providers to determine practical difference from mean

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable
<table>
<thead>
<tr>
<th><strong>2f.3 Provide Measure Scores from Testing or Current Use</strong> <em>(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance):</em></th>
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<td>see above</td>
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<tr>
<th><strong>2g. Comparability of Multiple Data Sources/Methods</strong></th>
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<tbody>
<tr>
<td><strong>2g.1 Data/sample (description of data/sample and size):</strong> Other sources not available for testing.</td>
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<tr>
<td><strong>2g.2 Analytic Method (type of analysis &amp; rationale):</strong></td>
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<tr>
<td>NA</td>
</tr>
<tr>
<td><strong>2g.3 Testing Results (e.g., correlation statistics, comparison of rankings):</strong></td>
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<td>NA</td>
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<tr>
<th><strong>2h. Disparities in Care</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2h.1 If measure is stratified, provide stratified results (scores by stratified categories/cohorts):</strong> NA</td>
</tr>
<tr>
<td><strong>2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:</strong></td>
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<tr>
<td>NA</td>
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<table>
<thead>
<tr>
<th><strong>TAP/Workgroup:</strong> What are the strengths and weaknesses in relation to the subcriteria for <em>Scientific Acceptability of Measure Properties?</em></th>
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<tr>
<th><strong>Steering Committee:</strong> Overall, to what extent was the criterion, <em>Scientific Acceptability of Measure Properties,</em> met?</th>
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<tbody>
<tr>
<td><strong>Rationale:</strong></td>
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<tr>
<th><strong>3. USABILITY</strong></th>
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<tr>
<th><strong>3a. Meaningful, Understandable, and Useful Information</strong></th>
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<tbody>
<tr>
<td><strong>3a.1 Current Use:</strong> In use</td>
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<tr>
<th><strong>3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) (If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years):</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data from SVS VQI and VSGN are reported to each hospital and provider in a format that can be transmitted to an appropriate public reporting mechanism.</td>
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<tr>
<th><strong>3a.3 If used in other programs/initiatives (If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years):</strong></th>
</tr>
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<tbody>
<tr>
<td>The Vascular Surgery Group of New England (VSGNE) has been tracking perioperative statin use in patients undergoing lower extremity bypass. In the VSGNE, a multicenter quality improvement consortium, data has been collected on 3,693 patients who have undergone LEB. Unpublished analyses of these data demonstrate that only 41% of patients were taking statins preoperatively before LEB in 2004. Through quality improvement efforts, percentage of statins prescribed at discharge has increased to 79% during the first 6 months of 2010. However, this rate of statin use falls significantly short of the 90% goal set forth by this quality improvement group in 2008.</td>
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| [www.vsgne.org](http://www.vsgne.org) |

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<thead>
<tr>
<th><strong>Testing of Interpretability</strong> <em>(Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement)</em></th>
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<tr>
<td><strong>3a.4 Data/sample (description of data/sample and size):</strong> VSGNE samples previously described</td>
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</table>

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable
3a.5 **Methods** *(e.g., focus group, survey, QI project)*: Semi-annual meetings of providers in VSGNE

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: Benchmark reports of this process measure have been provided to VSGNE member physician and hospitals since 2003, and discussed at semi-annual meetings. There have been no questions about interpretability.

3b/3c. **Relation to other NQF-endorsed measures**

3b.1 **NQF # and Title of similar or related measures:**
- 0118  Antilipid therapy at discharge
- 0439  Discharged on statin medication

*(for NQF staff use)* Notes on similar/related endorsed or submitted measures:

3b. **Harmonization**

If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):

3b.2 **Are the measure specifications harmonized? If not, why?** Yes

3c. **Distinctive or Additive Value**

3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**
- Different patient population

5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:

**TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for Usability?**

**Steering Committee: Overall, to what extent was the criterion, Usability, met?**

**Rationale:**

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**

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

Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)

4b. **Electronic Sources**

4b.1 **Are all the data elements available electronically?** *(elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims)*

Yes

4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**

4c. **Exclusions**

**Rating:** C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable
4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?  
No

4c.2 If yes, provide justification.

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.

It is possible to miss or inaccurately code statin status. We have overcome this by providing each site with a list of generic and trade names for known statin medications.

4e. Data Collection Strategy/Implementation

4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/implementation issues:

In the VSGNE experience which has been tracking statin usage since 2003, we have not experienced any difficulty with obtaining data related to statin usage. Our percent missing for perioperative statin use has been less than 2%.

4e.2 Costs to implement the measure (costs of data collection, fees associated with proprietary measures):

In the context of the VSGNE and SVS VQI registries, there is no additional cost as all of these data are already collected.

4e.3 Evidence for costs:

NA

4e.4 Business case documentation:

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for Feasibility?

Steering Committee: Overall, to what extent was the criterion, Feasibility, met?

Rationale:

| 4 | C | P | M | N |

RECOMMENDATION

(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.

| Time-limited | NA |

Steering Committee: Do you recommend for endorsement?

Comments:

| Y | N | A |

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Society for Vascular Surgery, 633 N. Saint Clair St., 22nd Floor, Chicago, Illinois, 60611

Co.2 Point of Contact
Sarah, Murphy, Staff, smurphy@vascularsociety.org, 312-334-2305

Measure Developer If different from Measure Steward
**Co.3** Organization  
Society for Vascular Surgery, 633 N. Saint Clair St., 22nd Floor, Chicago, Illinois, 60611

**Co.4** Point of Contact  
Sarah, Murphy, Staff, smurphy@vascularsociety.org, 312-334-2305-

**Co.5** Submitter if different from Measure Steward POC  
Sarah, Murphy, Staff, smurphy@vascularsociety.org, 312-334-2305-, Society for Vascular Surgery

**Co.6** Additional organizations that sponsored/participated in measure development  
The Vascular Study Group of New England

### 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.  
N/A

Ad.2 If adapted, provide name of original measure:  
Ad.3-5 If adapted, provide original specifications URL or attachment

**Measure Developer/Steward Updates and Ongoing Maintenance**  
Ad.6 Year the measure was first released: 2010  
Ad.7 Month and Year of most recent revision: 12, 2010  
Ad.8 What is your frequency for review/update of this measure?  
Ad.9 When is the next scheduled review/update for this measure?

Ad.10 Copyright statement/disclaimers:

Ad.11 -13 Additional Information web page URL or attachment:

**Date of Submission (MM/DD/YY):** 06/13/2011
## Patient Data

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>Hispanic or Latino</th>
<th>Not Hispanic or Latino</th>
<th>Hispanic or Latino</th>
<th>Weight</th>
<th>Height</th>
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</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Gender</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**Admission Data**

- Visit code (not required)
- Admit Date
- Surgeon
- Discharge Status
- Does the patient have Medicare Part B?

**Transfered from?**

- Home
- Rehab Unit
- Nursing Home

## Demographics

<table>
<thead>
<tr>
<th>Smoking</th>
<th>Hypertension</th>
<th>Diabetes</th>
<th>Beta blockers</th>
<th>CAD symptoms</th>
<th>CHF</th>
<th>COPD</th>
<th>Dialysis</th>
<th>Stress Test</th>
<th>ASA Class</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

**HbA1c**

- % (most recent value available pre- or post-op)

**Previous arterial**

- Bypass
- Aneurysm Repair
- Major Amp

**Pre-Op Medications**

- ASA
- Statin

**Previous**

- Right
- Indication
- Pathology
- Ambulation Pre-Op

<table>
<thead>
<tr>
<th>Pre-Op ABI</th>
<th>Pre-Op TBI</th>
<th>Pre-Op Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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**History**

<table>
<thead>
<tr>
<th>Right</th>
<th>Left</th>
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</thead>
<tbody>
<tr>
<td>Rest Pain</td>
<td>Rest Pain</td>
</tr>
<tr>
<td>Claudication</td>
<td>Claudication</td>
</tr>
<tr>
<td>Tissue Loss</td>
<td>Tissue Loss</td>
</tr>
<tr>
<td>Acute Ischemia</td>
<td>Acute Ischemia</td>
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<tr>
<td>Not Treated</td>
<td>Not Treated</td>
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</tbody>
</table>

**Pre-Op**

- Right
- Pre-Op ABI
- Pre-Op TBI
- Pre-Op Imaging

- Left
- Pre-Op ABI
- Pre-Op TBI
- Pre-Op Imaging

- Duplex
- MRA
- CTA
- DSA/Arteriogram
- Vein Mapping

**DSA/Arteriogram**

- Pre-Op ABI
- Pre-Op TBI
- Pre-Op Imaging

**Minor Amputation**

- No
- Yes

**Major Amputation**

- No
- Yes

**Leg PTA/Stent**

- No
- Yes

**Leg Bypass**

- No
- Yes

**Inflow PTA/Stent**

- No
- Yes

**Inflow Bypass**

- No
- Yes

**History**

- Right
- Indication
- Pathology
- Ambulation Pre-Op

<table>
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</table>

**Previous**

- Right
- Inflow Bypass
- Inflow PTA/Stent
- Leg Bypass
- Leg PTA/Stent
- Major Amputation
- Minor Amputation

**History**

- Left
- Indication
- Pathology
- Ambulation Pre-Op

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**Previous**

- Right
- Inflow Bypass
- Inflow PTA/Stent
- Leg Bypass
- Leg PTA/Stent
- Major Amputation
- Minor Amputation

**History**

- Left
- Indication
- Pathology
- Ambulation Pre-Op

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**Previous**

- Right
- Inflow Bypass
- Inflow PTA/Stent
- Leg Bypass
- Leg PTA/Stent
- Major Amputation
- Minor Amputation

**History**

- Left
- Indication
- Pathology
- Ambulation Pre-Op

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<th>Pre-Op Imaging</th>
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</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>
## Vascular Quality Initiative - Infra-Inguinal Bypass

### Procedure

**Urgency**
- [ ] elective
- [ ] urgent
- [ ] emergent

**Side**
- [ ] right
- [ ] left

**Graft Origin**
- [ ] femoral
- [ ] com fe
- [ ] profunda
- [ ] SFA
- [ ] AK pop
- [ ] BK pop
- [ ] tibial

**Graft Vein Type**
- [ ] reversed
- [ ] non-reversed
- [ ] reversed transposed
- [ ] lesser saph
- [ ] cephalic
- [ ] basilic
- [ ] composite

**Prosthetic**
- [ ] none
- [ ] autologous
- [ ] non-autologous biologic
- [ ] composite

**Grain Incision**
- [ ] none
- [ ] vertical
- [ ] horizontal

**Prosthesis**
- [ ] none
- [ ] Daconil
- [ ] PTFE
- [ ] non-autologous biologic
- [ ] composite

**Adjuncts**
- [ ] Vein Cuff
- [ ] Sequential Graft
- [ ] Heart Rate
- [ ] On Arrival in OR

**Concomitant Proximal Ipsilateral**
- [ ] PVI
- [ ] Bypass
- [ ] Endarterectomy

**Completion Study**
- [ ] Doppler
- [ ] Duplex

**Post-Op Data**
- [ ] Wound Infection
- [ ] Transfusion # units PRBC
- [ ] Transfusion # units transfused during total hospitalization
- [ ] Dysrhythmia
- [ ] Respiratory
- [ ] Stroke
- [ ] Discharge Patency
- [ ] Return to OR

**Discharge Medications**
- [ ] ASA
- [ ] Beta Blocker

**Discharge**
- [ ] Right
- [ ] Left

**Peri-Op Antibiotic Ordered**
- [ ] Start <1hr Pre-op
- [ ] 1st-2nd Gen Cephalexin

### Urgency
- [ ] urgent
- [ ] emergent

### Anesthesia
- [ ] spin
- [ ] epidural
- [ ] general

### Side
- [ ] right
- [ ] left

### Skin Prep
- [ ] chlorhexidine
- [ ] alcohol
- [ ] iodine
- [ ] chlor+iodine
- [ ] iodine+alcohol
- [ ] all 3

### Graft Recipient
- [ ] SFA
- [ ] profunda
- [ ] AK pop
- [ ] BK pop
- [ ] T-P trunk
- [ ] AT
- [ ] PT
- [ ] peroneal
- [ ] DP ankle
- [ ] PT ankle
- [ ] tarsal/plantar
- [ ] com fem

### Vein Segments
- [ ] none
- [ ] 1
- [ ] 2
- [ ] 3 or more

### EBL
- [ ] ml

### Total Procedure Time
- [ ] minutes

### Vein Harvest Incision
- [ ] continuous
- [ ] skip
- [ ] endoscopic

### Vein Graft Location
- [ ] sub-cutaneous
- [ ] sub-fascial

### Adjuncts

#### Vein Cuff
- [ ] no
- [ ] yes

#### Sequential Graft
- [ ] no
- [ ] yes

#### Heart Rate
- [ ] bpm
- [ ] Highest intra-op bpm

#### On Arrival in OR
- [ ] bpm

#### Concomitant Proximal Ipsilateral
- [ ] PVI
- [ ] yes (complete a Peripheral Vascular Intervention procedure form)

#### Bypass
- [ ] no
- [ ] yes (complete a Supra-Inguinal Bypass procedure form)

#### Endarterectomy
- [ ] no
- [ ] yes

#### Completion Study
- [ ] Doppler
- [ ] yes
- [ ] Duplex
- [ ] no
- [ ] yes

#### Post-Op Data
- [ ] Wound Infection
- [ ] Transfusion # units PRBC
- [ ] Transfusion # units transfused during total hospitalization
- [ ] Dysrhythmia
- [ ] Respiratory
- [ ] Stroke
- [ ] Discharge Patency
- [ ] Return to OR

#### Discharge Medications
- [ ] ASA
- [ ] yes
- [ ] intolerar
- [ ] no
- [ ] yes

#### Discharge
- [ ] Right
- [ ] Post-Op ABI

#### Post-Op ABI
- [ ] No ABI
- [ ] yes
- [ ] no

#### Post-Op TBI
- [ ] No ABI
- [ ] yes
- [ ] no

#### Discharge Ambulance
- [ ] amb
- [ ] amb w/assistance
- [ ] wheelchair
- [ ] bedridden

#### Peri-Op Antibiotic Ordered
- [ ] Start <1hr Pre-op
- [ ] yes
- [ ] no
- [ ] for medical reason

#### 1st-2nd Gen Cephalexin
- [ ] no
- [ ] yes
- [ ] no
- [ ] for medical reason
Vascular Quality Initiative - Infra-Inguinal Bypass Follow-Up

<table>
<thead>
<tr>
<th>Last Name:</th>
<th>First Name:</th>
<th>DOB:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRN:</td>
<td>SSN:</td>
<td>Zip/Postal Code:</td>
</tr>
<tr>
<td>Visit Code:</td>
<td>Surgeon:</td>
<td>Surgery Date:</td>
</tr>
<tr>
<td>Side:</td>
<td></td>
<td>Side:</td>
</tr>
</tbody>
</table>

**General Information**

<table>
<thead>
<tr>
<th>Date of Contact</th>
<th>Contact By</th>
<th>Current Smoking</th>
<th>No; Yes (within last 6 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact By</td>
<td>Office Visit; Phone; Refused follow-up visit; Lost to follow-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Living Status</td>
<td>Home; Nursing Home; Dead</td>
<td>Date of Death</td>
<td>Cause</td>
</tr>
<tr>
<td>Current Medications</td>
<td>ASA; Plavix; Coumadin; Beta Blocker; Statin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No; Yes; Intolerant; No; Yes; Intolerant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Infra-Inguinal Bypass**

<table>
<thead>
<tr>
<th>Current Ambulation</th>
<th>amb; amb w/assistance; wheelchair; bedridden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Patency</td>
<td>primary; prim. assisted; secondary; occluded</td>
</tr>
<tr>
<td>Patency Judged by</td>
<td>doppler only; palpable graft pulse; palpable distal pulse; ABI increase &gt;0.15; duplex</td>
</tr>
<tr>
<td>Ipsilateral ABI</td>
<td>none; superficial cellulitis; deep abscess; infection involving artery or graft</td>
</tr>
<tr>
<td>Ipsilateral TBI</td>
<td>none; superficial cellulitis; deep abscess; infection involving artery or graft</td>
</tr>
<tr>
<td>Bypass Revision</td>
<td>n (yes, surgery); y (yes, catheter-based); both</td>
</tr>
<tr>
<td>Thrombectomy/lysis - Revision</td>
<td>n (yes, surgery); y (yes, catheter-based); both</td>
</tr>
<tr>
<td>Major Amputation</td>
<td>no; minor amp; BK amp; AK amp;</td>
</tr>
</tbody>
</table>

Confidential - For QA Use Only
Version 1.9
LOWER EXTREMITY BYPASS DEFINITIONS – v.01.09

If more than one response applies, select the most severe (highest number) response for each data field.

Pre-op Data

Smoking: Prior = quit > 1 year ago. Current = still smoking within last 12 months. Include cigarettes, pipe, or cigar.

HTN (Hypertension): Defined as ≥ 140/90, either systolic or diastolic, at admission or within last 6 months, or clearly documented in medical record.

Beta-blockers: Peri-operative = started within one month before surgery or during surgery. Chronic = more than one month before surgery.

CAD Symptoms (Coronary artery disease): Stable angina = stable pattern or symptoms with or without antianginal medication. Unstable angina = new onset, increasing frequency, lasting > 20 min and/or rest angina.

CABG/PTCA: Coronary artery bypass, angioplasty, or stent.

CHF (Congestive Heart Failure): Documented CHF: Mild = SOB on exertion; Severe = SOB at rest, pulmonary edema, or pitting ankle edema. (Use 2 = mild if severity not documented.)

COPD: Not treated = COPD documented in record but not treated with medication. Medication includes theophylline, aminophylline, inhalers or steroids

Dialysis: Transplant = patient has functioning kidney transplant; Dialysis = currently on hemodialysis or peritoneal dialysis.

Creatinine: Last available measurement taken before procedure. If multiple measurements, use highest within 30 days of surgery.

Stress Test: Includes stress EKG, stress echo, nuclear stress scans, within 2 years of surgery.

Pre-admin living: Use last living status before any current, acute hospitalization, or rehab unit.

Previous Arterial:

Bypass - Any non-cardiac arterial bypass for occlusive disease
CEA - Carotid endarterectomy
Aneurysm Repair – Any known true arterial aneurysm repair (excluding cerebral or pseudo-aneurysm)
PTA/Stent – Of any non-cardiac artery
Major Amputation – Any amputation above the foot or hand

Pre-Op Medications: Taken within 36 hours of surgery. Statins include any HMG-CoA reductase inhibitor, such as Lipitor, Mevacor, Pravachol, Zocor, Lescol, etc. If Plavix is discontinued prior to surgery it should be coded = 0.

Pre-op Hemoglobin: Most recent pre-op hemoglobin within past 30 days.

Indication: Acute ischemia requires motor-sensory loss, sudden onset, and need for emergent treatment within 24 hours of presentation. Urgent = 12-72 hours. Emergent = <12 hours.

Pathology: If both aneurysm and occlusive disease, select the pathology that was the principal indication for the procedure.

Ambulation Pre-op: Chose best ambulation category experienced within one month of admission (lowest category).

Previous Ipsilateral/Contralateral: Inflow: aorto-iliac-femoral. Leg: intra-inguinal. Amputation: Major = above or below knee (loss of foot); Minor = within foot.

Pre-op ABI, TBI: Use highest value from affected leg. TBI = toe-brachial index. Use actual units. Use 2.0 if non-compressible.

DSA/Angiogram: Digital subtraction or conventional arteriogram.

Procedure

Urgency: Urgent = required operation within 72 hours, but >12 hrs of admission. Emergent = required operation within 12 hrs of admission to prevent limb loss.

Recipient: Use most distal site if sequential bypass.

Vein type: Use composite for spliced vein from more than one vein site.

Concomitant Proximal Ipsilateral: Procedure performed proximal to or at origin of leg bypass graft to improve inflow during same operation.

Post-op Data

Wound infection: Culture positive or requiring antibiotic treatment.

Graft infection: Documented in record as exposed graft or graft infection.

Transfusion: Total of all PRBC transfusions pre-op, intra-op, and post-op during this hospitalization.

Myocardial Infarction: Troponin: by local standards for MI. EKG: new Q waves, new ST and T wave changes. Clinical: documentation of MI by clinical criteria or ECHO or other imaging modality.

Dysrhythmia: New rhythm disturbance requiring treatment with medications or cardioversion.

CHF: Pulmonary edema with requirement or treatment in ICU.

Respiratory: Pneumonia = Lobar infiltrate on CXR and pure growth of recognized pathogen or 4+ growth of recognized pathogen in presence of mixed growth. Ventilator = required after initially extubated (if applicable).

Change renal function: New increase in creatinine of 0.5mg/dl. New dialysis includes peritoneal dialysis, hemodialysis, and hemo-filtration.

(Berplies to new dialysis not present pre-op.)

Bleeding; Infection; Thrombosis; Revision: Use 666 if Return to OR = 0.

Discharge patency: Primary = without other intervention; Primary-assisted = after intervention but without thrombosis; Secondary = after intervention for thrombosis.

Patency judged by: Use highest applicable modality. Palpable: clearly palpable pulse (not by Doppler). ABI: increase ABI (or TBI) > 0.15 compared with pre-op.

Post-op ABI, TBI: Use highest value from affected leg. TBI = toe-brachial index. Use actual units. Use 2.0 if non-compressible.

Peri-operative Antibiotics: Use 0=no if antibiotic was not ordered. To use 1=yes, antibiotic must be ordered to be given within 1 hour prior to skin incision and must be ordered to be discontinued within 24 hrs of end of time of operation. To use 2=no for medical reason, a medical reason must be documented in the chart that antibiotic not given. Acceptable antibiotics include: Ampicillin/sulbactam, Aztreonam, Cefazolin, Cefmetazole, Cefotetan, Cefuroxime, Ciprofloxacin, Clindamycin, Ertapenem, Erythromycin base, Gatifloxacin, Gentamicin, Levofloxacin, Meronidazole, Moxifloxacin, Neomycin, and Vancomycin.

1st-2nd Generation Cephalosporin: (Cefazolin or Cefuroxime) Use response 1=yes, if ordered. If documented in medical record that not ordered for medical reason use 2. Otherwise use 0=no.