Non-QPP Measure Descriptions

Measure Title:

M2S1: Procedures with statin and antiplatelet agents prescribed at discharge

Measure Description:

This measure estimates the frequency of procedures where a statin and antiplatelet agent was prescribed at discharge for any of the following procedures: Infra-Inguinal Bypass, Supra-Inguinal Bypass, Peripheral Vascular Intervention, Carotid Artery Stent, Carotid Endarterectomy, Thoracic and Complex EVAR, Endovascular AAA Repair, and Open AAA Repair.

Denominator:

All procedures captured in the Vascular Quality Initiative® Infra-Inguinal Bypass, Supra-Inguinal Bypass, Peripheral Vascular Intervention, Carotid Artery Stent, Carotid Endarterectomy, Thoracic and Complex EVAR, Endovascular AAA Repair, and Open AAA Repair Registries where the patient was at least 18 years old at the time of the procedure, and the patient was discharged alive during the reporting period.

Denominator Exceptions: N/A

Denominator Exclusions:

Exclude procedures associated with patients who were not discharged on statins or antiplatelets due to a documented medical reason.

Numerator:

All procedures captured in the Vascular Quality Initiative® Infra-Inguinal Bypass, Supra-Inguinal Bypass, Peripheral Vascular Intervention, Carotid Artery Stent, Carotid Endarterectomy, Thoracic and Complex EVAR, Endovascular AAA Repair, and Open AAA Repair Registries where the patient was at least 18 years old at the time of the procedure, and the patient was discharged alive during the reporting period where a statin and antiplatelet agent were prescribed at discharge.

Rationale:

Many patients undergoing vascular surgical procedures are not on appropriate medical therapy. Statin and antiplatelet therapy preoperatively and at discharge are associated with reduced mortality and improved survival after vascular surgery.

Supporting Evidence:

De Martino RR, Hoel AW, Beck AW, Eldrup-Jorgensen J, Hallett JW, Upchurch GR, Cronenwett JL, Goodney PP; Participation in the Vascular Quality Initiative is associated with improved perioperative medication use, which is associated with longer patient survival. Vascular Quality Initiative. J Vasc Surg. 2015 Jan 15. pii: S0741-5214(14)02200-9.

Medical management (MM) with antiplatelet (AP) and statin therapy is recommended for most patients undergoing vascular surgery. Importantly, discharge on AP and statin therapy was

associated with improved 5-year survival, compared with discharge on neither medication. Discharge on a single medication was associated with intermediate survival at 5 years.

De Martino RR, Eldrup-Jorgensen J, Nolan BW, Stone DH, Adams J, Bertges DJ, Cronenwett JL, Goodney PP; Perioperative management with antiplatelet and statin medication is associated with reduced mortality following vascular surgery. Vascular Study Group of New England. J Vasc Surg. 2014 Jun;59(6):1615-21, 1621.e1. doi: 10.1016/j.jvs.2013.12.013. Epub 2014 Jan 16.

Statin and antiplatelet therapy preoperatively and at discharge was associated with reduced 30-day mortality and an absolute 18% improved 5-year survival after vascular surgery. However, one-third of patients are sub optimally managed in real world practice. This demonstrates an opportunity for quality improvement that can substantially improve survival after vascular surgery.

Measure Type: Process

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S2: Amputation-free survival assessed at least 9 months following Infra-Inguinal Bypass for intermittent claudication

Measure Description:

This measure estimates freedom from amputation or death at least 9 months after Infra-Inguinal Bypass for intermittent claudication.

Denominator:

All procedures captured in the Vascular Quality Initiative® Infra-Inguinal Bypass Registry associated with patients who were at least 18 years old at the time of the procedure and with indication of claudication for the leg undergoing treatment during the calendar year prior to the reporting interval with at least 9 month follow up.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All procedures captured in the Vascular Quality Initiative® Infra-Inguinal Bypass Registry associated with patients who were at least 18 years old at the time of the procedure and with indication of claudication for the leg undergoing treatment during the calendar year prior to the reporting interval with at least 9 month follow up and who were alive and without minor or major amputation reported at a follow-up visit at least 9 months after the treatment

Rationale:

Patients with symptomatic peripheral arterial disease (PAD) secondary to atherosclerosis may present with intermittent claudication or critical limb ischemia. The first line of treatment for intermittent claudication due to PAD should be supervised walking exercise program to increase collateral circulation; however due to a uncertainty of the effect of this treatment revascularization, by an endovascular or surgical approach has often been performed to improve quality of life and limb salvage. The proposed measure will therefore serve as an indicator of both appropriateness and overall outcome.

Supporting Evidence:

Kakkar AM , Abbott JD. Percutaneous versus surgical management of lower extremity peripheral artery disease. Curr Atheroscler Rep. 2015 Feb;17(2):479.

Fakhry F, van de Luijtgaarden KM, Bax L, den Hoed PT, Hunink MG, Rouwet EV, Spronk S. Supervised walking therapy in patients with intermittent claudication. J Vasc Surg. 2012 Oct;56(4):1132-42.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Patient Safety

NQF Number: N/A

Measure Title:

M2S5: Amputation-free survival assessed at least 9 months following Peripheral Vascular Intervention for intermittent claudication

Measure Description:

This measure estimates freedom from amputation or death at least 9 months after Peripheral Vascular Intervention for intermittent claudication.

Denominator:

All procedures captured in the Vascular Quality Initiative® Peripheral Vascular Intervention Registry associated with patients who were at least 18 years old at the time of the procedure and with indication of claudication for the treated leg(s) undergoing Peripheral Vascular Intervention below external iliac during the calendar year prior to the reporting interval with at least at least 9 month follow up.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All procedures captured in the Vascular Quality Initiative® Peripheral Vascular Intervention Registry associated with patients who were at least 18 years old at the time of the procedure and with indication of claudication for the treated leg(s) undergoing Peripheral Vascular Intervention below external iliac during the calendar year prior to the reporting interval with at least at least 9 month follow up associated with patients who were alive and without minor or major amputation reported after the intervention.

Rationale:

Patients with symptomatic peripheral arterial disease (PAD) secondary to atherosclerosis may present with intermittent claudication or critical limb ischemia which is manifested as ischemic rest pain or tissue loss (lower extremity ulceration or gangrene). Treatment consists of medical optimization of risk factors and revascularization. Revascularization may be accomplished by open surgery or peripheral vascular intervention (PVI). PVI includes angioplasty, stenting/stent-grafting and atherectomy techniques. PVI is increasingly used in the treatment of symptomatic PAD due to its lower morbidity and mortality compared to open surgery. Interventions may be performed on a variety of anatomical levels broad divided into suprainguinal (aorta and iliac arteries) or infrainguinal (femoral, popliteal and infrapopliteal arteries including the tibial and peroneal arteries).

Supporting Evidence:

Nowygrod R, Egorova N, Greco G, Anderson P, Gelijns A, Moskowitz A, McKinsey J, Morrissey N, Kent KC. Trends, complications, and mortality in peripheral vascular surgery. J Vasc Surg. 2006 Feb;43(2):205-16.

Fowkes FG, Murray GD, Butcher I, et al. Ankle brachial index combined with Framingham Risk Score to predict cardiovascular events and mortality: a meta-analysis. JAMA. 2008;300:197–208.

Diehm C, Allenberg JR, Pittrow D, et al. Mortality and vascular morbidity in older adults with asymptomatic versus symptomatic peripheral artery disease. Circulation. 2009;120:2053–61.

Olin JW, Allie DE, Belkin M, Bonow RO, Casey DE Jr, Creager MA, Gerber TC, Hirsch AT, Jaff MR, Kaufman JA, Lewis CA, Martin ET, Martin LG, Sheehan P, Stewart KJ, Treat-Jacobson D, White CJ, Zheng ZJ. ACCF/AHA/ACR/SCAI/SIR/SVM/SVN/SVS 2010 performance measures for adults with peripheral artery disease. J Vasc Surg. 2010 Dec;52(6):1616-52.

Mohler ER, Gornik HL, Gerhard-Herman M, Misra S, Olin JW, Zierler RE. ACCF/ ACR/ AIUM/ ASE/ ASN/ ICAVL/ SCAI/ SCCT/ SIR/ SVM/ SVS 2012 appropriate use criteria for peripheral vascular ultrasound and physiological testing part I: Arterial ultrasound and physiological testing. J Vasc Surg. 2010, Vol. 56, Issue 1, e17–e51.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Patient Safety

NQF Number: N/A

Measure Title:

M2S7: Ipsilateral stroke-free survival assessed at least 9 months following Carotid Artery Stenting for asymptomatic procedures

Measure Description:

This measure estimates freedom from stroke or death at least 9 months after carotid artery stenting for asymptomatic carotid stenosis.

Denominator:

All procedures captured in the Vascular Quality Initiative® Carotid Artery Stenting Registry for asymptomatic carotid stenosis during the calendar year prior to the reporting interval with at least 9 month follow up. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All procedures captured in the Vascular Quality Initiative® Carotid Artery Stenting Registry for asymptomatic carotid stenosis during the calendar year prior to the reporting interval with at least 9 month follow up which are free of either stroke or death (any cause) after index carotid artery stenting. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Surgeons performing CAS on asymptomatic patients must select patients at low risk for morbidity or stroke and perform the procedure with a very low complication rate in order to achieve benefit. The proposed measure will therefore serve as an indicator of both appropriateness and overall outcome.

Supporting Evidence:

Updated Society for Vascular Surgery guidelines for management of extracranial carotid disease. Ricotta et al, J Vasc Surg, 54:3, 2011.

Neurologically asymptomatic patients with ≥ 60% diameter stenosis should be considered for CAS for reduction of long-term risk of stroke, provided the patient has a 3- to 5-year life expectancy and perioperative stroke/death rates can be ≤ 3%

Mo D, Wang B, Ma N, Gao F, Miao Z.Comparative outcomes of carotid artery stenting for asymptomatic and symptomatic carotid artery stenosis: a single-center prospective study. J Neurointerv Surg. 2014 Dec 8.

Periprocedural and long-term follow-up outcomes (including death and stroke) of CAS appear similar for ACS and SCS.

Choi JC, Johnston SC, Kim AS.Stroke. Early outcomes after carotid artery stenting compared with endarterectomy for asymptomatic carotid stenosis. 2015 Jan;46(1):120-5.

For asymptomatic carotid stenosis, CAS is associated with a substantially higher risk of postoperative stroke or in-hospital death than CEA even after adjustment for baseline differences in hospital and patient characteristics.

McDonald RJ, McDonald JS, Therneau TM, Lanzino G, Kallmes DF, Cloft HJ. Comparative effectiveness of carotid revascularization therapies: evidence from a National Hospital Discharge Database. Stroke. 2014 Nov;45(11):3311-9.

Among individuals undergoing carotid artery revascularization from a large sample of US hospitals, CAS was associated with higher risk of perioperative mortality, stroke, and unfavorable discharges compared with CEA for all ages and clinical presentations.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S8: Ipsilateral stroke-free survival assessed at least 9 months following isolated Carotid Endarterectomy for asymptomatic procedures

Measure Description:

This measure estimates freedom from stroke or death at least 9 months after carotid endarterectomy for asymptomatic carotid artery stenosis.

Denominator:

All procedures captured in the Vascular Quality Initiative® Carotid Endarterectomy Registry for carotid endarterectomy for asymptomatic disease during the calendar year prior to the reporting interval with at least 9 month follow up. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. This measure also excludes combined Coronary Artery Bypass Graft procedures, and excludes combined proximal or distal intervention or other combined arterial procedures. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All procedures captured in the Vascular Quality Initiative® Carotid Endarterectomy Registry for carotid endarterectomy for asymptomatic disease during the calendar year prior to the reporting interval with at least 9 month follow up which are free of either stroke or death (any cause) after index carotid endarterectomy. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Asymptomatic carotid bifurcation stenosis poses a potentially significant public health problem. In the US, stroke is the leading cause of disability and the 3rd leading cause of death. This report seeks to measure the freedom form stroke or death at one year for carotid endarterectomy, as prevention of stroke and overall survival are important metrics in surgical treatment of carotid disease.

Supporting Evidence:

This measure is supported by large body of evidence including several randomized clinical trials (e.g. ACAS), systematic reviews, and clinical practice guidelines.

Chambers BR, Donnan GA. Carotid endarterectomy for asymptomatic carotid stenosis. Cochrane Database Syst Rev. 2005 Oct 19;(4):CD001923.

Ricotta JJ, Aburahma A, Ascher E, Eskandari M, Faries P, Lal BK; Society for Vascular Surgery. Updated Society for Vascular Surgery guidelines for management of extracranial carotid disease. J Vasc Surg. 2011 Sep;54(3):e1-31.

Brott TG, Halperin JL, Abbara S, Bacharach JM, Barr JD, Bush RL, Cates CU, Creager MA, Fowler SB, Friday G, Hertzberg VS, McIff EB, Moore WS, Panagos PD, Riles TS, Rosenwasser RH, Taylor AJ; 2011 ASA/ACCF/AHA/AANN/AANS/ACR/ASNR/CNS/SAIP/SCAI/SIR/SNIS/SVM/SVS guideline on the management of patients with extracranial carotid and vertebral artery disease. Circulation. 2011 Jul 26;124(4):e54-130.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S9: Imaging-based maximum aortic diameter assessed at least 9 months following Thoracic and Complex EVAR procedures

Measure Description:

This measure estimates the frequency of imaging-based maximum aortic diameter assessment at least 9 months after Thoracic and Complex EVAR procedures.

Denominator:

All Thoracic and Complex EVAR procedures captured in Vascular Quality Initiative® Thoracic and Complex EVAR Registry during the calendar year prior to the reporting interval. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. This measure also excludes conversion to open.

Numerator:

All Thoracic and Complex EVAR procedures captured in Vascular Quality Initiative® Thoracic and Complex EVAR Registry during the calendar year prior to the reporting interval with at least 9 month follow up, where the follow up included a CT scan or MR documenting the maximum aortic diameter. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Endovascular repair of thoracic and complex aneurysms is a viable alternative to open repair; however, endoleak and sac expansion are not uncommon. Imaging to monitor sac diameter remains critical to follow the long-term efficacy of this type of repair. The proposed measure will therefore serve as an indicator of optimal follow-up of these patients after this procedure.

Supporting Evidence:

Oliveira N, Bastos Gonçalves F, Ten Raa S, Rouwet E, Hendriks JM, Cássio I, Mota Capitão L, Verhagen H. Do we need long-term follow-up after EVAR and TEVAR or can we simplify surveillance protocols? J Cardiovasc Surg (Torino). 2014 Apr;55(2 Suppl 1):151-8.

Blair R, Collins A, Harkin DW. Complex EVAR for abdominal aorto-iliac aneurysm (AAIA) is associated with high rate of endoleak and less aortic sac shrinkage compared to conventional EVAR for AAA. Ir J Med Sci. 2014 Oct 17.

O'Callaghan, Greenberg RK, Eagleton MJ, Bena J, Mastracci TM. Type Ia endoleaks after fenestrated and branched endografts may lead to component instability and increased aortic mortality. J Vasc Surg. 2015 Jan 16. pii: S0741-5214(14)02014-X.

Measure Type: Process

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Communication and Care Coordination

NQF Number: N/A

Measure Title:

M2S10: Survival at least 9 months after elective repair of small thoracic aortic aneurysms

Measure Description:

This measure estimates freedom from death at least 9 months after elective repair of small thoracic aortic aneurysms in patients without a known connective tissue disorder.

Denominator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Thoracic and Complex EVAR Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 6 cm for women, or less than or equal to 6.5 cm for men at the index procedure, and with at least at least 9 month follow up. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up that are not dead are excluded from this measure. Procedures associated with patients with a known connective tissue disorder are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Thoracic and Complex EVAR Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 6 cm for women, or less than or equal to 6.5 cm for men at the index procedure, and with at least 9 month follow up and who are alive. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Surgeons should select patients for intervention who have a reasonable life expectancy and who do not have a high surgical risk. One year survival after repair of small thoracic aortic aneurysms is an indicator of patients who were not frail prior to the procedure and who did not experience a major complication. The proposed measure will therefore serve as an indicator of both appropriateness and overall outcome.

Supporting Evidence:

Chau, KH and Elefteriades, JA. Natural History of Thoracic Aortic Aneurysms: Size Matters, Plus Moving Beyond Size. Progress in cardiovascular diseases. July–August, 2013. Volume 56, Issue 1, Pages 74–80.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S11: Imaging-based maximum aortic diameter assessed at least 9 months following Endovascular AAA Repair procedures

Measure Description:

This measure estimates the frequency of imaging-based maximum aortic diameter assessment at least 9 months after Endovascular AAA Repair procedures.

Denominator:

All Endovascular AAA Repair procedures captured in Vascular Quality Initiative® Endovascular AAA Repair Registry during the calendar year prior to the reporting interval. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. This measure also excludes procedures that were converted to open.

Numerator:

All Endovascular AAA Repair procedures captured in Vascular Quality Initiative® Endovascular AAA Repair Registry during the calendar year prior to the reporting where maximum aortic diameter was assessed during a follow up visit at least 9 months after surgery and who are alive. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Change in maximum aortic diameter is an indicator of disease progression. Multiple guidelines recommend annual lifelong imaging follow-up after EVAR to identify and to correct complications such as endoleaks or residual aortic sac enlargement and thereby prevent death due to aneurysm rupture after EVAR. The proposed process measure will serve as an indicator for appropriate clinical follow-up.

Supporting Evidence:

Chaikof, E.L.Brewster, D.C.Dalman, R.L.Makaroun, M.S.Illig, K.A.Sicard, G.A. et al. The care of patients with an abdominal aortic aneurysm: the Society for Vascular Surgery practice guidelines. J Vasc Surg. 2009;50:S2–49.

Moll, F.L.Powell, J.T.Fraedrich, G.Verzini, F.Haulon, S.Waltham, M. et al. Management of abdominal aortic aneurysms clinical practice guidelines of the European Society for Vascular Surgery. Eur J Vasc Endovasc Surg. 2011;41:S1–S58.

Measure Type: Process

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Communication and Care Coordination

NQF Number: N/A

Measure Title:

M2S12: Survival at least 9 months after elective repair Endovascular AAA Repair of small abdominal aortic aneurysms

Measure Description:

This measure estimates freedom from death at least 9 months after elective repair of small abdominal aortic aneurysms.

Denominator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Endovascular AAA Repair Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 5.5 cm for women, or less than or equal to 6.0 cm for men at the index procedure, and with at least 9 month follow up. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Endovascular AAA Repair Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 5.5 cm for women, or less than or equal to 6.0 cm for men at the index procedure, and with at least 9 month follow up and who are alive. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Surgeons should select patients for intervention who have a reasonable life expectancy and who do not have a high surgical risk. One year survival after endovascular repair of small abdominal aortic aneurysms is an indicator of patients who were not frail prior to the procedure and who did not experience a major complication. The proposed measure will therefore serve as an indicator of both appropriateness and overall outcome.

Supporting Evidence:

Chaikof et al. The care of patients with an abdominal aortic aneurysm: The Society for Vascular Surgery practice guidelines. J Vasc Surg, 50:4, supplement, 2009.

Elective repair is recommended for patients that present with a fusiform AAA ≥5.5 cm in maximum diameter, in the absence of significant co-morbidities.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S13: Survival at least 9 months after elective Open AAA repair of small abdominal aortic aneurysms

Measure Description:

This measure estimates freedom from death at least 9 months after elective open repair of small abdominal aortic aneurysms.

Denominator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Open AAA Repair Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 5.5 cm for women, or less than or equal to 6.0 cm for men at the index procedure, and with at least 9 month follow up. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Denominator Exceptions: N/A

Denominator Exclusions:

Procedures associated with patients lost to follow up are excluded from this measure. Procedures associated with missing key data elements that are required to calculate the outcomes measure will be excluded from this measure.

Numerator:

All elective procedures for aneurysm repair captured in the Vascular Quality Initiative® Open AAA Repair Registry during the calendar year prior to the reporting interval where maximum aortic diameter is less than or equal to 5.5 cm for women, or less than or equal to 6.0 cm for men at the index procedure, and with at least 9 month follow up who are alive. All procedures are associated with patients who were at least 18 years old at the time of the procedure.

Rationale:

Elective abdominal aortic aneurysm repair is a procedure designed to improve survival by preventing aneurysm rupture. The analysis of rupture risk vs operative risk and the life expectancy of the patient should be considered when choosing a surgical treatment. Operative mortality after surgical repair of small AAA is not significantly less than for larger aneurysms but patients with multiple risk factors such as Age ≥70 years, CHF, COPD, HTN and CRI, should have much larger aneurysms before open repair in order to justify the risk of operation. The proposed measure will therefore serve as an indicator of both appropriateness and overall outcome.

Supporting Evidence:

The care of patients with an abdominal aortic aneurysm: The Society for Vascular Surgery practice guidelines. Chaikof et al, J Vasc Surg, 50:4, supplement, 2009.

Elective repair is recommended for patients that present with a fusiform AAA ≥5.5 cm in maximum diameter, in the absence of significant co-morbidities.

Beck AW, Goodney PG, Nolan BW, Likosky DS, Eldrup-Jorgensen J, Cronenwett JL. Predicting 1-year mortality after elective abdominal aortic aneurysm repair, Vascular Study Group of Northern New England. Journal of Vascular Surgery. Volume 49, Issue 4, April 2009, Pages 838–844.

Sahal M, Prusa AM, Wibmer A, Wolff KS, Lammer J, Polterauer P, Kretschmer G, Teufelsbauer H. Elective Abdominal Aortic Aneurysm Repair: Does the Aneurysm Diameter Influence Long-Term Survival? European Journal of Vascular and Endovascular SurgeryVolume 35, Issue 3, March 2008, Pages 288–294.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A

Measure Title:

M2S16: Absence of unplanned reoperation after closed lower extremity major amputation

Measure Description:

The percentage of patients undergoing closed lower extremity major amputation (below, thru or above knee) for ischemic arterial disease who do NOT have unplanned reoperation during the same admission for infection, bleeding or amputation revision.

Denominator:

All procedures captured in the Vascular Quality Initiative® Lower Extremity Amputation Registry where the patient was at least 18 years old at the time of the procedure and underwent closed lower extremity major amputation (below, thru or above knee) for ischemic arterial disease during the reporting period.

Denominator Exceptions: N/A

Denominator Exclusions:

To both numerator and denominator: Patients undergoing initial open amputation (who always require reoperation) and patients undergoing amputation for non-arterial etiologies, including trauma, neoplasm, infection and diabetic neuropathy without underlying arterial disease.

Numerator:

All procedures captured in the Vascular Quality Initiative® Lower Extremity Amputation Registry where the patient was at least 18 years old at the time of the procedure and underwent closed lower extremity major amputation (below, thru or above knee) for ischemic arterial disease who did NOT have unplanned reoperation during the same admission for infection, bleeding or amputation revision during the reporting period.

Rationale:

Major closed amputations (below and above knee) can be complicated by infection, bleeding or failure to heal, resulting in unplanned reoperation, if the level and conduct of the initial procedure is not appropriate. This outcome measure appropriately identifies proper amputation level selection and proper surgical technique.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Patient safety

NQF Number: N/A

Measure Title:

M2S17: Absence of serious technical complications during peripheral arterial intervention

Measure Description:

The percentage of patients undergoing lower extremity interventional treatment for arterial occlusive disease (including balloon angioplasty, stenting and atherectomy) who do NOT experience technical complications (Access site: stenosis, occlusion, AV fistula, hematoma or pseudoaneursm, Thrombosis, Embolization, Perforation, or Dissection (target lesion or other artery) that require admission, or surgical or interventional treatment.

Denominator:

All procedures captured in the Vascular Quality Initiative® Peripheral Vascular Intervention Registry where the patient was at least 18 years old at the time of the procedure and underwent peripheral arterial intervention (balloon angioplasty, stenting or atherectomy) of the lower extremity (abdominal aorta and more distal) arteries for treatment of occlusive disease during the reporting period.

Denominator Exceptions: N/A

Denominator Exclusions:

To both numerator and denominator: Patients undergoing interventional treatment for aneurysm disease or trauma.

Numerator:

All procedures captured in the Vascular Quality Initiative® Peripheral Vascular Intervention Registry where the patient was at least 18 years old at the time of the procedure and underwent peripheral arterial intervention (balloon angioplasty, stenting or atherectomy) of the lower extremity (abdominal aorta and more distal) arteries for treatment of occlusive disease who did NOT experience technical complications (Access site: stenosis, occlusion, AV fistula, hematoma or pseudoaneursm, Thrombosis, Embolization, Perforation, or Dissection (target lesion or other artery) that required hospital admission, or transfusion, surgical or interventional treatment prior to discharge during the reporting period.

Rationale:

Avoiding technical complications is critical to patient safety during peripheral interventional procedures. The complications listed above can result in serious harm, so this outcome measure tracks an important safety issue.

Measure Type: Outcome

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Patient safety

NQF Number: N/A

Measure Title:

M2S19: Proper patient selection for perforator vein ablation

Measure Description:

The percentage of patients undergoing treatment of incompetent lower extremity perforator veins with surgical or ablation treatment (radiofrequency, laser, mechanochemical, chemical, or embolic adhesive) who have CEAP clinical severity of disease C5 or C6 (venous ulcer or history of ulcer), and not less severe C1-4 disease.

Denominator:

All procedures captured in the Vascular Quality Initiative® Varicose Vein Registry where the patient was at least 18 years old at the time of the procedure and underwent treatment of incompetent lower extremity perforator veins with surgical or ablation treatment (radiofrequency, laser, mechanochemical, chemical, or embolic adhesive) during the reporting period.

Denominator Exceptions: N/A

Denominator Exclusions: None

Numerator:

All procedures captured in the Vascular Quality Initiative® Varicose Vein Registry where the patient was at least 18 years old at the time of the procedure and underwent treatment of incompetent lower extremity perforator veins with surgical or ablation treatment (radiofrequency, laser, mechanochemical, chemical, or embolic adhesive) who had CEAP clinical severity of disease C5 or C6 (venous ulcer or history of ulcer) during the reporting period.

Rationale:

Perforator vein treatment has only been shown to benefit patients with venous ulcers or a history of ulcers, but is often applied to patients with less severe disease unnecessarily. This measures documents appropriate patient selection and effective cost reduction.

Measure Type: Process

Number of Multiple Performance Rates (If Applicable): N/A

Inverse Measurement: No

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

NQS Domain: Effective Clinical Care

NQF Number: N/A