A Focus on the National Quality Initiatives
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1. INTRODUCTION/OVERVIEW

The SVS PSO began 2018 announcing the addition to the Participation Awards with a quality improvement (QI) category and continuing our two national quality initiatives (QI):

- Improving the rates of prescribing anti-platelets (AP)/ statins (discharge medications) for vascular surgery patients.
- Increasing imaging rates in long term follow-up (LTFU) for EVAR patients.

QI necessitates an investment of time and resources at every level of the health system, and VQI registry data provides the foundation for this work. All of us benefit from learning about each other’s QI successes and discussing ways to overcome challenges.

For the 2018 initiatives, the SVS PSO created toolkits and educational webinars for members that promoted best practices and offered comparative benchmarks. Throughout the year, PSO staff and VQI members continued leading this effort by conducting:

- Focus group discussions with high performing centers
- Webinars on the QI initiatives
- Discussions at regional QI meetings
- Increased communications with members and key stakeholders
- Surveys of VQI members that detail success factors and obstacles they have overcome

Experienced VQI centers have applied registry data and implemented innovative approaches to improve success rates for these initiatives. SVS PSO seeks to build on these approaches and help this QI initiative expand from clusters of innovation to coast to coast improvements. A key ingredient in this effort is you—the change agent at a VQI center.

For change agents, any QI effort requires that you identify and acknowledge health care problems, think about how to improve and learn how to implement and sustain improvements. The purpose of this supplement is to assist you in initiating a quality improvement project at your own center which will help you earn credit towards the Participation Awards. The original QI Project Guide will help you with step-by-step strategies and tools that can guide you through a successful QI Project from initiating the project through implementing and evaluating improvement. The 2018 supplement contains information specifically selected to help VQI members improve prescribing rates for AP/ statins at discharge and improving EVAR LTFU imaging rates. We have set the ambitious goals of reaching 100% compliance. For each national indicator this supplement includes:

1. Data and background information to facilitate change management
2. Case studies, best practices and innovations
3. Protocols, tools, resources and QI webinar links

We invite you to reside with us in the ‘biggest room in the world is the room for improvement’ as we update and improve this supplement with case studies, innovations, study results and successes from your VQI centers.

Cheryl Jackson, DNP, MS, RN, CNOR, CPHQ
SVS PSO, Quality Director
Acknowledgements

The Society for Vascular Surgery Patient Safety Organization (SVS PSO) would like to thank the following individuals for their editorial input and expert guidance in developing this QI Project Guide Supplement to the 2016 QI Project Guide.

Nadine Caputo, SVS Quality Practice Director

The VQI would also like to thank staff from the following VQI centers for their invaluable contributions. Their ability to successfully complete QI projects and their willingness to share their stories has helped the SVS PSO create a QI Project Guide Supplement that is practical and relevant to other VQI centers.

Carolinias Vascular Quality Group (NC/SC)
- Jeb Hallett, MD

Heart Hospital Baylor (Texas)
- Rosha Nodine, RN; Dennis Gable, MD

Memorial Hospital of South Bend (IN)
- Catherine Bringedahl, MS, RCIS; Gerald Duprat, MD; Cheryl Stopper, Quality

Northwestern Memorial – Central DuPage Hospital (Illinois)
- Cheryl Jackson, RN; Joseph Schneider, MD

Southern California Vascular Outcomes Improvement Collaborative (SoCal VOICe)
- Karen Woo, MD

University of Pittsburg Medical Center (Pennsylvania)
- Ali Arak, BS; Fern Schwartz, BS; Robin Brown, BA; Jason Wagner, MD; Theodore Yu, MD; Mohammad Eslami, MD; Michel Makaroun, MD; Michael Singh, MD

Yale New Haven Hospital (Connecticut)
- Myriam Jean, RN; Christine Orion, MD; Felicia Staines; Marilyn Hirsch; Ritu Agarwal; Matthew Gordon; Cathy Mousch; Francine LoRusso; Sandra Fillion; Diane Collins

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Nancy Heatley, Education and Research Projects Manager
Cheryl Jackson, RN, Quality Director
Dan Neal, Analytics Director
James Wadzinski, General Manager
Yuanyuan Zhao, Statistician
“The biggest room in the world is the room for improvement”

(Anonymous)
2. DISCHARGE MEDICATIONS

The first National QI Initiative of the VQI is the prescribing of AP/statins to appropriate patients to improve their long-term vascular health. It was selected because it is a treatment that impacts the majority of vascular surgery patients and there is a strong evidence base that prescribing AP/statins for appropriate patients increases patient survival.

2.1 DATA AND BACKGROUND INFORMATION TO FACILITATE CHANGE MANAGEMENT

Based on the results of a 2015 VQI study led by Dr. Randall DeMartino, the poster above was developed for use by VQI sites to share in reception areas, offices and clinics to show the impact of regularly taking these medications on patient survival.

This information can be used to encourage buy in and support for change management from key personnel in your organization. (See QI Project Guide, p.5, https://www.vqi.org/wp-content/uploads/QI-Project-Guide-FINAL-for-Web-06232016.pdf)
From January 2011 to the present, the VQI tracked the use of statins at discharge and demonstrated some key results. The tracking of the impact of statins, the effect of the publication of those results, the presentation at regional meetings and the ability to share the reports from the physician and site level has had a clear impact on practice results.

“(SVS PSO) issues reports and registry data that show that certain practices can improve patients’ outcomes (and) provide bi-annual data releases to help hospitals assess their performance over time and in comparison, to other facilities nationally and within their region. ... It’s exciting to know that VQI members are using this registry data to improve care.”

Dr. Jens Eldrup-Jorgensen, SVS PSO Medical Director 
Vascular Specialist, February 2017
The chart below shows the rate of prescribing discharge medications across VQI centers in 2018. The average rate is 80.0%. The long-range goal for VQI centers is a prescribing rate of 100%. If your center’s rate is below 100% or below the national average, you may want to initiate a QI project on this topic.
In addition to viewing prescribing rates by center, we can also track D/C Medications aggregated at the VQI Regional Group level. This enables each Regional Group to discuss differences in best practices and encourage centers to adapt these practices so regional rates can improve.

**Regional Participation Is Important**

![Graph showing discharge antiplatelet + statin rates by region ID and time period (Jan 2011 - Dec 2015 vs. Jan 2016 - Dec 2016)]
Highlights from Discharge Medications QI Webinar

- National guidelines are important to include as part of the rationale for changing practice and protocols.

- Start Statins in all patients with

  ACC/AHA Prevention Guideline

  2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults

  Patients with PAD should be initiated in a statin

  Class 1A Recommendation

- Start Antiplatelet medications in all patients

  2011 ACCF/AHA Focused update of the guideline for the management of patients with peripheral artery disease (updating the 2005 guideline)

  Patients with PAD should be initiated on an AP medication

  Class 1A Recommendation

- For patients with cardiovascular disease, both antiplatelets and statins are shown to reduce the risks of
  - Heart attack
  - Stroke
  - Vascular death
It may be helpful to review the prescribing rates across vascular procedures, so you can identify the type of vascular surgery that may show greater variation or need improvement in prescribing rates.

See link to QI Webinar for Discharge Medications (if you are viewing this document electronically, you can click to view the webinar directly).
https://drive.google.com/file/d/0B6sVggHY6rrSbTVWSUJQWnp6SFk/view
2.2 CASE STUDIES, BEST PRACTICES AND INNOVATIONS

Highlights from South Bend Case Study

This case study from South Bend hospital provides an example of how they used VQI data to show that only 65.9% of their patients in 2014 received antiplatelet and statin medications and they used a combination of clinical protocols, education and workforce reallocation to increase the prescribing rate to over 97% in 2016.

### Background

Q1 2014 VQI data demonstrated that only 65.9% of PVI patients were discharged on antiplatelet and statin drugs. Although cardiology supported prescribing antiplatelet and statins for cardiovascular patients, interventional radiologists/surgeons were reluctant to manage patients long term.

A 2015 VQI study found that for every 25 patients treated, discharge on an antiplatelet agent and statin medication is associated with 3.5 additional patients alive at 5 years; a 14% absolute survival benefit and 40% adjusted improved survival.


### Hypothesis

A new statin protocol and changes in staffing/workflow management will improve the percentage of peripheral vascular cases that have a statin and appropriate antiplatelet therapy documented on discharge.

### Key Metrics

Metric description - 90% of peripheral vascular cases that have documented Statin plus ASA or Coumadin or Plavix (or other appropriate antiplatelet therapy) on discharge or documented contraindication

Metric definition

- **Numerator**: Number of peripheral vascular cases with statin plus ASA, Coumadin, Plavix or documented contraindication
- **Denominator**: Number of peripheral vascular cases
- **Data source**: VQI
- **Frequency of collection and report out**: Monthly and quarterly
- **Metric “owner”**: Cheryl Stopper, Quality Management
- **Verification**: Quality Management
South Bend Case Study (continued)

Value creation

- Clinical quality: Impact on clinical quality using evidence-based guidelines
- Stakeholder satisfaction: Positive impact on patient and family satisfaction with the right treatment being provided and potential for improved patient survival

Improvement Strategies

Develop and implement Change Management Strategies that:

- Standardize protocol via an Ad Hoc committee (cardiology, IR, surgery, internist & PCP)
- Utilize Nurse Navigators as key to real-time success management; reallocated staff – no additional FTEs
- Promote continuing education
- Embed guidelines into EMR post-order sets

Develop Statin protocol for cardiovascular patients to implement first 6 months, and then monitor Statins plus ASA or Coumadin or Plavix (or other appropriate antiplatelet therapy) on discharge for PV Intervention the second 6 months.

Communication plan for protocol developed and executed with multiple methods of communication (meetings, email, etc.)

- Target physician and staff groups (cardiology, vascular surgery and physician offices) to effect improvement

To ensure patient safety, monitor stats for increased bleeding disorders.
South Bend Case Study (continued)

Results
Although this initiative took time to develop and show improvement, the percentage of peripheral vascular cases that, on discharge, had documented statin and appropriate antiplatelet therapy or documented contraindications improved dramatically over a two-year period.

![Chart showing percentage of patients on statin and antiplatelet therapy from Q1-2014 to Q1-2016]

**Patients with Documented Statin and Antiplatelet Therapy at Discharge**
*2014: 65.9% // 1st Quarter 2016: 97.9%*

Benefits and Next Steps
- The statin and antiplatelet implementation process carried over to all cardiovascular and stroke patients. Continue to use this protocol as a pay for performance measure for 2016
- Added metrics to monitor statins at discharge for CEA and Fem-Pop bypass patients
- Customized antiplatelet therapy via VerifyNow and Thromboelastography (TEG)

Highlights from Baylor Badge Best Practice
Baylor hospital designed a QI process to track and improve the rates of discharge medications for their vascular patients and implemented discharge medication badges at Baylor.

Discharge Badges at Baylor
The development of a Discharge Badge (above) helped to reinforce the importance of the discharge medications.
To see the full Poster content, view Poster in the VQI Annual Meeting evening session, “The Right Meds for the Right Outcomes” by Rosha Nodine et al in the Members’ Only section of the VQI website.

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<thead>
<tr>
<th>Discharge Medications</th>
<th>Minimum registry standards defined by evidence-based guidelines.</th>
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<td>RX at DC</td>
<td>Aspirin</td>
</tr>
<tr>
<td>AMI (STEMI/STEMI)</td>
<td>X</td>
</tr>
<tr>
<td>PCI</td>
<td>X</td>
</tr>
<tr>
<td>ICD</td>
<td>X only if EF &lt; 40% or has had prior MI</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>X evidence based BB = bepridil, diltiazem, nifedipine, diltiazem</td>
</tr>
<tr>
<td>CABG</td>
<td>X antplatelet includes Aspirin and/or P2Y12</td>
</tr>
<tr>
<td>Vascular (Exclude arterial)</td>
<td>X antplatelet includes Aspirin and/or P2Y12</td>
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One key element in the Baylor process was the communication with primary care physicians to ensure that discharge medications could be continued if indicated. See sample documentation letter below. Documentation of discharge medication is important for care coordination and patient follow-up. It is important to document and track progress over time to evaluate the effectiveness of the QI program. (see the Evaluation section of the QI Project Guide on p.18 https://www.vqi.org/wp-content/uploads/QI-Project-Guide-FINAL-for-Web-06232016.pdf)
2.3 PROTOCOLS, TOOLS, RESOURCES AND QI WEBINAR LINKS
Below is an example of a completed Project Charter that is included in the QI Guide for a QI project. This center set a goal of a 25% improvement rate over 6 months and the charter highlights their interventions and required resources. This QI project and others have developed template letters to send to patients and their primary care physicians who will be managing their medications long term. Blank charters can be found at https://www.vqi.org/vqi-resource-library/quality-improvement/.
Resources Required
What people, materials, and/or finances will be needed to conduct the project? Who must be kept informed?

Key Metrics | Milestones
---|---
**Date Outcome Metrics: Example**
Increased one and five-year survival rates for vascular procedure patients that were discharged on antiplatelet and statin medications. | **Milestone / Description Example**
- Confirm baseline information using VQI data
- Notify and educate all vascular procedure providers on the new initiative.
- Contact IT for guidance in adding templates
- Meet with care coordinators to identify programs to aid patients in obtaining medications, if needed.
### Outcome Metrics

“How will you know the project is successful?”

- e.g., LOS, surgical site infections

### Process Metrics: Example

- Verify that 76% of eligible vascular procedure patients were discharged on an antiplatelet and statin medication at six months after project implementation using VQI and/or EMR data.
- Verify that 95% of eligible PVI patients were discharged on an antiplatelet and statin medication at one year after project implementation using VQI registry data and reports using VQI and/or EMR data.

### Process Metrics:

“How will you ensure the interventions you implement are being completed?”

- e.g., % pts on progressive care unit, % discharged patients on statins and anti-platelets Rx

### Team Members

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<th>Exec Sponsor:</th>
<th>Clinical Sponsor:</th>
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<tr>
<td>Sponsor:</td>
<td>Process Owner:</td>
</tr>
<tr>
<td>Project Leader:</td>
<td>Team Members:</td>
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Communications with primary care physicians and patients are a key part of the National QI Initiative on Discharge Medication. Below you’ll see examples of both types of letters currently in use by the Southern California Vascular Outcomes Improvement Network (SoCal VOICe).

SAMPLE LETTER FROM VASCULAR SURGEON TO PRIMARY PHYSICIAN

Dear Dr.____________________,

We had the pleasure of seeing (Patient Name) in our office today in consultation. In our medication review we noticed our patient is not on anti-platelet therapy. Anti-platelet therapy has been shown to be beneficial in reducing the risk of myocardial infarction, stroke and vascular death in patients with symptomatic peripheral arterial disease.

This benefit has been shown extend to patients undergoing carotid surgery, lower extremity bypass surgery, and abdominal aortic aneurysm surgery.

Accordingly, at today’s visit, we started our patient on aspirin 81 mg daily. We ask for your assistance in monitoring for the very rare complication of bleeding in your future office visits with our patient.

This initiative to optimize anti-platelet use in patients with vascular disease is a component of the Southern California Vascular Outcomes Improvement Collaborative (SoCal VOICe), in which I am a member and active participant. The So Cal VOICe is a regional voluntary cooperative group of vascular disease specialists dedicated to improving outcomes and advancing the care of vascular patients. Our regional group is part of a national network of quality improvement organizations sponsored by the Society for Vascular Surgery.

As always, if you have any questions please contact me at (Center name/telephone number), and I would be happy to speak with you.

Please note: for a copy of the sample letter to use in your own practice, go to the VQI website, under VQI Resources Library, Quality Improvement, Discharge Medications, or link to https://www.vqi.org/vqi-resource-library/discharge-medication-communications/
SAMPLE LETTER FROM VASCULAR SURGEON TO PATIENT

(DATE)

Dear (Patient Name),

As we discussed in the office, we have started you on a daily low-dose aspirin. This is one of a class of medications called “anti-platelet therapy”. Anti-platelet therapy has been shown to be beneficial in reducing the risk of heart attack, stroke and vascular death in patients with peripheral arterial disease.

Aspirin is typically used to treat pain. At low doses, aspirin also makes atherosclerotic plaques (cholesterol build-up in blood vessels) more stable, so they are less likely to break apart and cause heart attacks or stroke. We are also sending a letter to your primary care physician to inform him or her of your new medication and to help monitor for side effects, which are rare. It is important to notify our office or your primary doctor if you develop any bleeding problems.

This initiative to optimize anti-platelet use in patients with vascular disease is a component of the Southern California Vascular Outcomes Improvement Collaborative (SoCal VOICe), in which I am a member and active participant. The So Cal VOICe is a regional voluntary cooperative group of vascular disease specialists dedicated to improving outcomes and advancing the care of vascular patients. Our regional group is part of a national network of quality improvement organizations sponsored by the Society for Vascular Surgery.

As always, if you have any questions please contact our office at (Telephone Number), and we would be happy to speak with you.

Please note: for a copy of the sample letter to use in your own practice, go to the VQI website, under VQI Resources Library, Quality Improvement, Discharge Medications, or link to https://www.vqi.org/vqi-resource-library/discharge-medication-communications/
2.4 Enhanced Reporting for Discharge Medications

2018 was the first year the VQI released a report providing a center the data needed to improve or sustain their progress on D/C Medications. You received the following letter if your center had D/C Medication data in 2017. The PSO plans to release this report the 1st quarter of each year as long as D/C Medications remains a national qualitative initiative.

Discharge Medications (2018 procedures)

- Excludes patients who died in hospital and patients who were not treated for medical reason or non-compliant
- Includes CEA, CAS, OAAA, EVAR, TEVAR, INFRA, SUPRA, PVI and LEAMP procedures entered in the VQI as of March 31, 2018

For the 2018 Participation Awards, centers that are above the 2018 75th percentile for the rate of discharge antiplatelet+statin will receive a point toward their final award (as long as their rate is not significantly lower than their 2017 rate). Centers that are below the 75th percentile but show statistically significant improvement over their 2017 rate will also receive a point toward their final award.

The table below shows your center’s current antiplatelet+statin rate for 2018 cases and the rate of discharge antiplatelet+statin that must be achieved among your expected number of remaining 2018 cases for your center to reach the 75th percentile for 2017 or to show statistically significant improvement over its 2017 rate.

Note that the 75th percentile for 2017 has been provided as a benchmark, but the 75th percentile for 2018 cases will likely be different than it was for 2017. Thus, reaching the 75th percentile for 2017 will not guarantee that your center is above the 75th percentile for 2018.

Number of 2018 procedures meeting inclusion criteria that your center had entered as of March 31, 2018

N (%) of those patients receiving antiplatelet+statin

75th percentile of antiplatelet+statin rates among VQI centers for 2017

Your center’s antiplatelet+statin rate for 2017 cases

Estimated total number of procedures your center will enter for 2018*

Estimated number of cases remaining to be entered

If your center is above the 75th percentile for 2017, minimum rate among remaining cases to stay there

If your center is below the 75th percentile for 2017, minimum rate among remaining cases to reach the 75th percentile or show statistically significant improvement over your 2017 rate

*Extrapolated from your center’s case volume for Jan-Mar 2018.
2.5 Discharge Medications: Learning Points

- Not all patients are getting appropriate medical treatment before or after their vascular operation
- Some centers can reach 100%, others less so
- Type of surgery seems to impact medication use
- Medication use after surgery is associated with improved overall survival

See Discharge Meds content on VQI website at https://www.vqi.org/vqi-resource-library/discharge-medication-communications/
3. Endovascular Aortic Aneurysm (EVAR) Long Term Follow-Up (LTFU) Imaging

“Endovascular aortic aneurysm repair (EVAR) is a non-curative treatment of infra-renal abdominal aortic aneurysm disease. When commercially available devices are used within their instructions for use, excellent long-term rupture free survival can be anticipated. However, due to the persistent presence of the aneurysm and the life-long risk of device related failure and/or endoleak, up to 20% of patients may experience some form of aorta related re-intervention after EVAR. For this reason, long-term follow-up (LTFU) imaging after EVAR is mandatory and patients need to be educated about this preoperatively and repeatedly during follow-up. It is the obligation of the operating surgeon to stress the need for life-long imaging surveillance and integrate discussions about LTFU into all stages of AAA EVAR care to ensure that their patients achieve durable outcomes.”

Salvatore Scali, MD
Chair of the EVAR Registry Committee
3.1 EVAR LFTU IMAGING PRACTICE RECOMMENDATIONS

Postoperative imaging surveillance has been recommended by medical societies including the SVS and the American College of Radiology. Recent studies suggest low compliance rates with long term follow-up imaging. The SVS PSO selected improvements in EVAR LTFU imaging rates because increased compliance with EVAR LTFU imaging is associated with reduced risk of rupture and improved patient survival. Imaging is critical to assessing the success of the aneurysm repair. More VQI centers are beginning to identify best practices and conducting studies on EVAR LTFU imaging.

SVS PRACTICE GUIDELINES

From the Society for Vascular Surgery

SVS practice guidelines for the care of patients with an abdominal aortic aneurysm: Executive summary

Elliot L. Chaikof, MD, PhD, David C. Brewster, MD, Ronald L. Dalman, MD, Michel S. Makaroun, MD, Karl A. Illig, MD, Gregorio A. Sicard, MD, Carlos H. Timaran, MD, Gilbert R. Upchurch Jr, MD, and Frank J. Veith, MD, Atlanta, Ga; Boston, Mass; Palo Alto, Calif; Pittsburgh, Pa; Rochester, NY; St. Louis, Mo; Dallas, Tex; Ann Arbor, Mich; and Cleveland, Ohio

“We currently recommend contrast enhanced CT imaging at 1 and 12 months during the first year after EVAR.”
3.2 Case Studies, Best Practices and Innovations

Highlights from EVAR LTFU Focus Group

In April 2017, the SVS held a focus group discussion with 10 high performing community and academic medical centers on successful strategies for improving LTFU rates.

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<tr>
<th>Organizational Success Factors</th>
<th>Challenges</th>
<th>Processes that work at high performing centers</th>
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<tbody>
<tr>
<td>• Physician leadership</td>
<td>• Transfer patients – out of area</td>
<td>• Protocol for LTFU: Begin the process beginning at 9 months – 21 months post EVAR</td>
</tr>
<tr>
<td>• Staff person responsible for LTFU</td>
<td>• Building relationships with out of area physician practices</td>
<td>• Multiple reminders/communication channels (letters, phone, texts, patient portals)</td>
</tr>
<tr>
<td>• Strong relationships with physician private practices</td>
<td>• Emergency department patients</td>
<td>• Same day imaging and follow-up visits</td>
</tr>
<tr>
<td>• Patient education – early (pre-op) and often</td>
<td></td>
<td>• Automated tracking of missed visits</td>
</tr>
<tr>
<td>• Communication of patient expectations (follow-up forever)</td>
<td></td>
<td>• Communication with multiple staff on LTFU status; monthly data runs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tracking hard to reach patients: Facebook, obits, certified letters</td>
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Additional resources can be found at:

Links to QI webinar and to QI Resource tab (if you are viewing this document electronically, you can click to view the webinar directly)

https://drive.google.com/open?id=0B6sVggHY6rr5ZTBZeHlna0ptMDg
The following center submitted a poster at the 2017 VQI@VAM Networking and Poster Presentation to showcase their success with EVAR Imaging LTFU. Knowing how easy it is to lose momentum and sustain a QI project, they took steps necessary to maintain their achievement. They have submitted and are presenting their process for sustaining and improving a QI project at the 2018 VQI@VAM Networking and Poster Presentation.

Successful Continuation of EVAR Patient Compliance Utilizing VQI for Long Term Follow Up

Ali Arak BS, Fern Schwartz BS, Robin Brown BA, Jason Wagner MD, Theodore Yuo MD, Mohammad Eslami MD, Michel Makaroun MD, Michael Singh MD

University of Pittsburgh Medical Center (UPMC), Heart and Vascular Institute, UPP Vascular Surgery

**ABSTRACT:** Lifelong surveillance after endovascular aneurysm repair (EVAR) is necessary to identify early problems and additional aneurysmal degeneration. Loss to long term follow-up (LTFU) however is quite frequent and can be as high as 50% in some reports. Strategies to improve compliance with follow-up are essential for good long-term outcomes. Our team utilizes the VQI database as a resource to facilitate patient compliance. To accomplish this goal, an assembly line model was created to more efficiently contact patients who may be otherwise lost to follow up. Implementing VQI and the assembly line method has produced a 100 percent compliance rate in 2015 for long term EVAR follow ups. In comparison, the Great Lakes region and overall VQI achieved 75 percent and 70 percent EVAR follow up respectively. At our center, ninety six percent of eligible EVAR patients had imaging performed and were seen in the outpatient clinic. The remaining four percent completed a phone follow up. In 2016, the assembly line method continued to successfully produce a 100 percent follow up rate, with 98 percent of patient receiving imaging and were seen in the outpatient clinic. The remaining two percent received a phone follow up. The assembly line approach to data entry and follow-up scheduling maximizes data capture and minimizes patient loss to follow-up, all while improving patient care.

**PROBLEM STATEMENT:** Losing endovascular aneurysm repair (EVAR) patients to long term follow up is a giant hurdle for quality improvement initiatives. Long term follow-up (LTFU) is defined by VQI as a patient contact 1 year after the procedure date; with the acceptable capture period occurring between 9 and 21 months. Without proper surveillance, patients increasingly susceptible to device failure, endoleaks, remote aneurysm formation, or aneurysm sac expansion including remote rupture after EVAR. EVAR LTFU can also be used to gauge the effectiveness, cost-benefit analysis, and patient outcomes of vascular interventions and devices.

**GOALS/ OBJECTIVES:** The use of the VQI database as a resource for identifying long term EVAR follow up patients enables our center to improve patient compliance with their scheduled one year follow up visits. To more efficiently manage data, our center needed to create a model that streamlined the follow up effort. The assembly line model has increased our center’s follow up rate for 2015 and 2016.
**IMPROVEMENT STRATEGY:** Creating an “assembly line” model simplifies the follow up efforts by clearly defining each team member’s responsibilities to accurately capture EVAR LTFU. The assembly line model requires that each team member perform their individual part to create a successful follow up effort. The assembly line approach to data entry and follow-up scheduling maximizes data capture and minimizes patient loss to follow-up, all while improving patient care.

**PROCESS:** Assembly lines are renowned for efficiency. To ensure proper EVAR follow up, our quality team adopted an assembly line approach to data entry and LTFU coordination. Our VQI team supports eighteen physicians at nine hospitals performing in excess of 140 EVARs annually. Development of a streamlined method was crucial to efficiently manage data. There are four main components of our assembly line model: First, the attending physicians capture and submit EVAR procedures into the VQI registry. The physicians are responsible for entering each EVAR procedure into VQI following the completion of the procedure. The second component of the assembly line is completion of the VQI entry and submission of the EVAR procedure to VQI. Our lead data coordinator is responsible for the accuracy and completion of the VQI entry. The remaining components of the assembly line are performed twelve months later if the first two components are properly entered into VQI. If the procedures are not properly entered into VQI, the remaining part of the assembly line is unable to complete a follow up since there will be no documented record of the procedure in VQI. The cohesive effort of the four components of the assembly line must simultaneously work collectively and independently.

The third component of the assembly line is the appropriate identification of timely LTFU. Each month a follow up abstractor reviews a list from the VQI follow up tools. The target goal is to identify and complete the follow ups by twelve months. This ensures adequate time to contact patients, and to give the patient the maximum amount of time to conveniently schedule follow up appointments before the 21-month deadline. At our center, the average time of patient contact occurs at 12.2 months and the range of follow ups performed is from nine to twenty months. The fourth and final component of the assembly line involves suitable contact measures if required. Once identified, patients who lack a one-year follow up visit are entered into a local database. These patients are contacted by the follow up abstractor and reminded of the clinical importance of EVAR LTFU. Special emphasis is placed on the risks associated with failing to follow up, including the lack of imaging to assess the durability of EVAR success. The VQI team ensure all patients are rescheduled for their follow up visits. If a patient is unable to be contacted via telephone, post cards and certified mail are sent to the patient’s address in attempt to reach the patient.

If the patients are unable to be contacted, alternative tools are utilized to verify the patient is still alive. The VQI team utilize the social security death index tool in VQI, and scan obituaries within the region to ensure the patient is not deceased. All information is then inputted into the VQI. If a patient is adamant they do not want follow-up, then the VQI team obtains a phone follow up, and the information collected is documented and conveyed to the physician. This data is then entered into the VQI database. At our center, a phone follow-up is viewed as the least favorable method to obtain data, in part due to the lack of imaging, and is only used as a last resort. If a patient has relocated to another state, the patient will be asked to submit their records from their new vascular physician.
RESULTS: The implementation of this assembly line method at our center has enabled a 100-percent compliance rate for 2015 EVAR LTFU. In comparison, the Great Lakes region and VQI nationally only report 75 percent and 70 percent compliance rate respectively (Figure 1). In 2016, a 100 percent compliance rate has been maintained.

CHALLENGES/LESSONS LEARNED: Incorporating VQI into our assembly line model endorses an additional resource to verify our patients comply with EVAR LTFU. Our data management process improves patient care because potentially life-threatening circumstances can be mitigated through proper follow up visits. There are many challenges faced with EVAR LTFU. One challenge is relocation of patients. Patients sometimes migrate between healthcare systems within the same city. Due to insurance restrictions, some post-operative patients cannot be seen at our institution for LTFU. The patient may still be within our local area, yet be unable to follow up in person. Regardless, it is the responsibility of the quality team to request the follow up records from institutions outside our health network and properly document the findings in VQI and the patient’s medical record. Sometimes patients relocate to other states or even other countries. Depending on where the patient may have relocated, obtaining an adequate contact number may be challenging. If the patient has moved outside of the United States, it becomes even more difficult to contact them.

Furthermore, most vascular patients have other co-morbidities and other pressing health issues. These patients are sometimes less likely to return for follow up due to their constant health issues and visits to other physicians. Moreover, some elderly patients have difficulties with unassisted travel, and thus rely on third-parties for conveyance to clinic and imaging appointments. Transportation and monetary factors have a known deleterious impact on patient compliance with prescribed follow up. With these challenges in mind, proper guidance and assistance from the quality team is vital to achieve LTFU capture and improved quality of patient care. Proper communication with these patients and requesting healthcare records, adequately assuring and convincing reticent patients to follow up, sufficiently facilitating transportation, and other related services are all daunting tasks which the quality team must navigate properly. Implementing the assembly line model assists in the proper allocation and completion of these tasks, and this model is pivotal in enabling our team to achieve a 100 percent EVAR LTFU compliance goal in 2015 and in 2016 and to successfully continue a 100 percent compliance goal in 2017.

CONCLUSIONS/SUCCESS FACTORS: In addition to the assembly line model, another major driver of successful LTFU at our center is the design of the follow up clinic. The presence of ICAVL-certified PVLs in all of our outpatient clinics allows the patients to receive imaging immediately prior to seeing their physician in the same office location. This decreases the number of appointments a patient must schedule as well as the locations a patient must travel to for their follow up. A recent VQI survey showed only 19 percent of responding sites performed imaging at the same location as the office visit (Figure 5). A third of responding centers indicate that imaging is performed within the same building as the outpatient clinic, but not within the same office location. The remaining half of responding centers indicated that imaging is performed at a separate location from the outpatient clinic. The separate location of the imaging and the outpatient clinic may leave patients susceptible to failing to follow up, or
having an inadequate follow up without imaging performed. Adopting a seamless process provides convenience to the patients and guarantees that all of the steps required for proper follow up are done simultaneously.

The culture at our center clearly plays a role in our EVAR LTFU success. The quality team understands the continuing efforts to maintain an exemplary EVAR LTFU compliance rate. This culture translates to our patients. Our department motto states “once you become an EVAR patient, you are a vascular patient for life.” Patient education of the expectations and commitments to return each year for their EVAR follow up visit is thoroughly explained by our physicians before any intervention is initiated. These same points are also directly communicated to these patients’ primary care providers. These factors play a crucial role in ensuring our center continues this exemplary EVAR LTFU rate.

Our center also strives to not only achieve a high LTFU rate, but it is equally important for the patients to have imaging performed. Many publications have shown that EVAR patients who receive imagining with their LTFU have lower mortality rates compared to patients who receive either phone follow ups or do not obtain imaging. Not only did our center achieve a 100 percent EVAR LTFU compliance in 2015, but ninety-six percent of eligible EVAR patients had imaging performed and were seen in the outpatient clinic (Figure 2). The remaining four percent were unable to be seen in the office, and completed phone follow ups. In 2016, a 100 percent compliance rate has been maintained with ninety-eight percent of eligible EVAR patients obtaining imaging and were seen in the clinic (Figure 3). The remaining two percent were unable to be seen in the outpatient clinic and completed a phone follow up. Not only did the compliance rate remain steady from 2015 to 2016, but the proportion of EVAR patients that received imaging in 2016 increased (Figure 4). The assembly line model has verified that each patient was contacted, and all measures were utilized to capture a comprehensive follow up with imaging.

Reference

3.3 TOOLS AND RESOURCES

There are many different QI methodologies used to guide and keep a project on track. In healthcare, the PDCA/PDSA and DMAIC are widely used. We have provided examples of PDCA/PDSA and DMAIC through the lens of VQI. Also included in this section are samples of an EVAR LTFU Imaging charter, a patient reminder card, and an abstract describing how one center is sustaining their EVAR LTFU Imaging rate.

DMAIC PROCESS

This example of the DMAIC process is compiled from the “Successful Continuation of EVAR Patient Compliance Utilizing VQI for Long Term Follow Up” poster abstract submitted by University of Pittsburg Medical Center (page 30).

**Define:** Define the problem, your goal, and or scope of the project

We defined our project: Improving EVAR Patient Compliance Utilizing VQI for Long Term Follow Up

**Measure:** Get baseline, compare to target

Our LTFU baseline measure was 74%, but our goal was 100%.

**Analyze:** Find the root cause (process map, fishbone)

We went through our processes to identify our problems.

**Improve:** Identify solutions and implement

We went through our processes to identify our problems. Our solution was the “Assembly Line Model”, which we implemented.

**Control:** Sustain/continue monitoring

Now we’re at the sustaining stage and working hard to maintain our goal.
This PDCA example describes a D/C Medications project.

**PLAN DO CHECK ACT / PLAN DO STUDY ACT (PDCA/PDSA)**

**Plan:** Recognize an opportunity and plan a change
- Revise 100% of PVI provider discharge order sets to reflect AP and statin medication options.
- Notify all PVI providers of the new SVS guidelines and initiative.
- Meet with care coordinators to identify programs to aid patients in obtaining medications, if needed.
- Prescribe antiplatelet and statin medication for all PVI patients at hospital discharge. Target – 25% increase at six months post implementation and another 25% increase at one-year post implementation

**Do:** Test the change and carry out a small-scale study
- Educate/train prescribers
- Implement the project

**Check:** Review the test, analyze the results and identify what was learned
- Perform daily checks for medication compliance prior to the PVI patient’s discharge.
- Verify that 76% of eligible PVI patients are discharged on an antiplatelet and statin medication at six months after project implementation.
- Verify that 95% of eligible PVI patients are discharged on an antiplatelet and statin medication at one year after project implementation.
- Data will be displayed in table format including aggregate data of all statin and antiplatelet medication prescribed, then separated by antiplatelet only, statin only, and neither.

**Act:** Take action based on what was learned in the study step
If the change did not work, go through the cycle again with a different plan. If successful, incorporate what was learned from the test into wider changes. Use what was learned to plan new improvements, beginning the cycle again (ASQ, n.d.).
- If the project was unsuccessful, go through the cycle again with a different plan. If successful, incorporate changes into the day-to-day practice of PVI providers.
- Success = ≥ 76% overall prescribed
- Benchmark against other hospitals within the region and nationally who participate in the SVS VQI.

Below is a charter addressing EVAR Imaging LTFU. This center’s goal was to improve their EVAR LTFU and imaging from 48% to 80% or greater. This charter provides resources and processes needed to have a successful platform for improving the EVAR Imaging LTFU rate. Blank charters can be found at https://www.vqi.org/vqi-resource-library/quality-improvement/. Look at the links in the center of the page. Scroll down (4th link from the bottom).

Project Overview

Problem Statement:
There is inadequate follow up with sac measurement for patients with endovascular repair of abdominal aortic aneurysms (EVAR) performed at Hospital X. Of the 80 EVARs were performed between 2014-2015, only 48% had appropriate follow up at both 1 and > 9 months. Upon further review of the remaining 52%, the overwhelming majority had either no imaging or simple ultrasound at these time points. Surveillance of EVAR is important to detect endoleak or continued sac enlargement. Literature has shown that patients lost to follow up are at increased risk for aortic rupture and death.

Goal:
To improve follow up to 80% with sac measurements at both short term (1-month) and long-term (>9 months) for all patients with EVARs performed at Hospital X for calendar years (CYs) 2016-2017 for: adequate 1 month follow up is defined by CT imaging with sac measurement; adequate long-term follow up is defined by CT or ultrasound with sac measurement at > 9 months.

Scope:
This project will include patients undergoing EVAR within Hospital X’s care areas. The project will require all practicing surgeons performing EVARs, inpatient and outpatient physician extenders within (HVC), surgical residents rotating on vascular services, EPIC clinical support, and administrative/scheduling reinforcements.

Deliverable(s):
- Short-term follow up (1-month)
  1. MD Project Leader will address all physicians performing EVARs at Hospital X to give update on Clinical Practice Guidelines regarding appropriate EVAR (what? Sac size, endoleak) surveillance.
  2. MD Project leader and Process Owners will work with the APP Manager to educate and incorporate plans for scheduling CTA abdomen/pelvis on the day of discharge.
  3. The Nursing Coordinator and outpatient APP will work with Administrative/Scheduling support to ensure appointments for CTA abdomen/pelvis are made prior to one month follow up with physician.
4. APP Manager and inpatient APP will work EPIC clinical support to create template for discharge of EVAR patients to include post-operative imaging and follow up.

5. Nurse Educators and Coordinator will update patient education letter will be given to all patients undergoing EVAR at Hospital X with instructions for post-operative imaging and surveillance.

6. The Clinical Informatics Coordinator and process owners will work with the Nursing Coordinator to create a secured dashboard to create and maintain master list of all patients undergoing EVAR at Hospital X.

   Long-term follow up (9-months)

7. All patients who underwent EVAR at Hospital X from 2016-2017 will be reviewed for long term follow up.

8. Those patients lost to follow up will receive official letter drafted by Physician Champion requesting either follow up appointment at Hospital X or results of imaging performed by outside physicians be faxed to Physician Champion. Letter to be scanned into patient EMR.

9. At 6 weeks without response, phone call will be made by team members to request patient make appointment or fax results.

10. If patient sends hard copies of outside images, physician champion to make sac measurements.

11. Legal and regulatory to assist with follow up letters

**Resources Required:**
Collaboration between physicians and physician extenders will be required. EPIC support is needed to create hardwired triggers to ensure post-operative imaging is scheduled. Monthly updates including abstraction team will be essential. The Joint Data Analysis Team (JDAT) will need to pull data to create and maintain a prospective dashboard with the assistance of the Nursing Coordinator.

**Key Metrics / Milestones**

<table>
<thead>
<tr>
<th>Outcome Metrics:</th>
<th>Milestone / Description:</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EVAR 1 month follow up</td>
<td>Complete QI Project Overview</td>
<td>12/2017</td>
</tr>
<tr>
<td>2. EVAR 9 month follow up as per VQI report</td>
<td>Confirm baseline outcome metric</td>
<td>1/2018</td>
</tr>
<tr>
<td></td>
<td>Identify root cause/hypothesis</td>
<td>2/2018</td>
</tr>
<tr>
<td></td>
<td>Implement Deliverables</td>
<td>6/2018</td>
</tr>
<tr>
<td></td>
<td>Evaluate progress</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Project completion</td>
<td>12/2018</td>
</tr>
</tbody>
</table>

**Process Metrics:**
Monthly review of EVARs
Monthly performance report to clinical teams

<table>
<thead>
<tr>
<th>Exec Sponsor:</th>
<th>Clinical Sponsor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor</td>
<td>Process Owner:</td>
</tr>
<tr>
<td>Project Leader:</td>
<td>Team Members:</td>
</tr>
</tbody>
</table>

This reminder card was developed by the Carolinas Regional Quality group and provided to each vascular surgery patient to inform them of the importance of the one-year follow-up appointment and to reinforce the connection between patients, their vascular surgeon and better outcomes.
3.4 DATA AND BACKGROUND INFORMATION TO FACILITATE CHANGE MANAGEMENT

Since EVAR imaging is a long-term follow-up measure, rates are not calculated until two years after the surgery date to allow centers adequate time to capture and enter LTFU. Our baseline rate is 55% for cases performed in 2015. Historically, rates have held nearly constant: 52.8%, 53.8%, 50.4% and 56.6% in 2011-2014, respectively. The goal is for 100% of EVAR patients to have imaging at one year.

Enhanced Reporting for Discharge Medications and Follow-up Imaging After EVAR

The PSO provides a variety of reports to participating centers and physicians to compare themselves to regional and national benchmarks. 2018 was the first year the VQI released a report providing centers the data needed to improve or sustain their progress on our two national quality initiatives. In addition, we have provided physician-level reports and plan to re-issue these reports in the near future.

The graphs below show the rate of imaging for an individual physician and how they compare to other physician rates in the VQI over time. It is followed by a graph showing the individual physician and comparison with other physicians in a region. The final graph is a bar chart showing how your region compares with other VQI regions. The graphs help providers compare performance and identify the need for change or improvement.
SAMPLE PHYSICIAN REPORT: EVAR LTFU (CONT’D)

You received the following letter if your center had EVAR LTFU data in 2015.
Follow-Up Imaging After EVAR (2016 procedures)

Excludes patients who died within 21 months of surgery. “Imaging” includes CT, CTA, MR, MRA, duplex, and/or angiogram imaging between 9 and 21 months of surgery. Time from surgery to imaging = Date of follow-up visit when surgery was recorded-surgery date.

EVAR is used to treat AAA to prevent rupture and improve survival. Patients must have good survival and successful aneurysm exclusion to offset the risk of operation and gain benefit. All EVAR patients should undergo annual imaging to confirm success of the procedure and demonstrate absence of endoleak which could lead to rupture.

For the 2018 Participation Awards, centers that are above the 2016 75th percentile for EVAR follow-up imaging will receive a point toward their final award (if their rate is not significantly lower than their 2015 rate). Centers that are below the 75th percentile but show statistically significant improvement over their 2015 EVAR follow-up imaging rate will also receive a point toward their final award.

The table below shows your center’s current imaging rate for 2016 cases and the number of additional cases with imaging that must be reported for your center to reach the 75th percentile for 2015 or to show statistically significant improvement over its 2015 imaging rate.

Note that the 75th percentile for 2015 has been provided as a benchmark because centers have had a full 21 months to enter follow-up for those cases, but the 75th percentile for 2016 cases will likely be different than it was for 2015. Thus, reaching the 75th percentile for 2015 will not guarantee that your center is above the 75th percentile for 2016.

<table>
<thead>
<tr>
<th>Number of 2016 cases meeting inclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%) of 2016 patients with follow-up imaging, including aortic diameter, 9-21 months after EVAR</td>
</tr>
<tr>
<td>Your center’s follow-up imaging rate for 2015 cases</td>
</tr>
<tr>
<td>75th percentile for 2015 cases among VQI centers</td>
</tr>
<tr>
<td>Additional number of cases with follow-up imaging required for your center to reach the 75th percentile for 2015</td>
</tr>
<tr>
<td>Additional number of cases required to show statistically significant improvement over your center’s rate for 2015 cases*</td>
</tr>
</tbody>
</table>

*“NA” indicates it is mathematically impossible for your center to show statistically significant improvement over its 2015 rate.
VQI Physician Report: Follow-Up Imaging After EVAR

2011-June 2015. Excludes patients who died or received conversion to OAAA within 15 months of surgery.

EVAR for asymptomatic AAA is a prophylactic procedure intended to reduce risk of rupture and improve overall survival. Patients must have good survival and a successful aneurysm exclusion to offset the upfront risk of the procedure, and gain overall benefit. Although there may be some disagreement about the modality of imaging, most would agree that long-term follow-up imaging as a whole is essential after EVAR to determine the success of the procedure, defined by exclusion of the aneurysm without significant endoleak or continued sac enlargement.

In this report, we have provided your personal rate of follow-up entered in the VQI after EVAR. This includes the overall imaging rate (any imaging between 0 and 21 months) and the rate of longer follow-up (defined in this report as 9-21 months). We have also provided how the patients were followed (face-to-face vs. another method).

We sought to determine how often patients are getting ANY post-operative imaging (0-21 months) and to determine how often patients are getting longer term follow up. For longer term follow-up, 9-21 months was chosen for the time period to provide a buffer between what most would consider early follow-up after EVAR (here defined as <9 months), to account for some practice patterns in which patients might not get a second follow-up image until one year after early imaging, and to provide a 12 month period over which additional patients might receive their longer term "one year" imaging.

Sal Scalzi, MD, Chair, EVAR Registry Committee
Adam Beck, MD, Chair, Arterial Quality Committee

<table>
<thead>
<tr>
<th></th>
<th>You</th>
<th>Your Region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases (2011-June 2015)</td>
<td>11</td>
<td>827</td>
<td>23756</td>
</tr>
<tr>
<td>Percentage of patients with imaging*, including aortic diameter, 0-21 months after EVAR</td>
<td>55%</td>
<td>66%</td>
<td>59%</td>
</tr>
<tr>
<td>Percentage of patients with imaging*, including aortic diameter, 9-21 months after EVAR</td>
<td>55%</td>
<td>63%</td>
<td>51%</td>
</tr>
<tr>
<td>Percentage of patients who were seen face-to-face 9-21 months post surgery</td>
<td>91%</td>
<td>72%</td>
<td>58%</td>
</tr>
<tr>
<td>Percentage of patients who were contacted by other methods 9-21 months post surgery</td>
<td>0%</td>
<td>2%</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Imaging* includes CT, CTA, MR, MRA, duplex, and/or angiogram imaging within 15 months of surgery. Time from surgery to imaging = Date of follow-up visit where surgery was recorded-surgery date. If you practiced in more than one region, "your region" is the region in which you performed the most procedures.
3.5 EVAR LTFU Imaging Learning Points
Impact of Loss to Long Term Follow-Up

SVS PRACTICE GUIDELINES
- Postoperative imaging surveillance recommended by societies and regulatory agencies
- Recent studies suggest low compliance with follow-up imaging
- Improving compliance with postoperative surveillance has been identified as a major opportunity for surgical quality improvement

“We currently recommend contrast enhanced CT imaging at 1 and 12 months during the first year after EVAR.”

“Taken together, these data suggest that in-person follow-up after EVAR is associated with better survival outcomes.”

EVAR LTFU IMAGING LEARNING POINTS
- Post-operative imaging recommended by medical specialty societies and regulatory agencies at 1 and 12 months during the first year after EVAR.
- Imaging is critical to assessing the success of the aneurysm repair
- Lower LTFU imaging rates are associated with poorer clinical outcomes

Additional resources for LTFU EVAR Imaging:
- VQI Poster abstracts from 2017 (See Members’ Only on VQI website in the 2017 VQI Annual Meeting Evening Poster Session)
4. VQI Participation Awards

The Society for Vascular Surgery Patient Safety Organization (SVS PSO) instituted its Participation Awards to encourage and reward participating sites to fully-engage in Vascular Quality Initiative (VQI). The Awards recognize that active participation in VQI is a critical component of our quality improvement mission, but are not a measure on the quality of care provided by any VQI center. Given that the VQI operates within the framework of a Patient Safety Organization, it is precluded from publicly reporting on outcome measures. The VQI believes that the measures selected for the VQI Participation Awards, however, are strong indicators of a commitment to improving care and fostering engagement with vascular patients.

4.1 2017 VQI Participation Awards

The SVS PSO provided the results of the 2017 VQI Participation Awards in March 2018. This award recognizes the importance of active participation in the VQI as a critical component of our quality improvement mission. This is the third year of the VQI Participation Award program, and we were very encouraged by the 2017 results. In particular, the improvement in the median rate of reporting for long-term follow-up, which increased from 61% for 2014 follow-up last year, to 70% for 2015 follow-up for this year’s reporting period. We congratulate all of our centers for their hard work and dedication, which led to this improvement.

The 2017 results can be found at this link [https://www.vqi.org/2017-vqi-participation-awards-see-final-results/](https://www.vqi.org/2017-vqi-participation-awards-see-final-results/)

VQI centers are eligible to receive up to 3 “Stars” depending on the extent of their participation in three categories:

- Rate of long-term follow-up (LTFU) reporting
- Attendance (focused on physicians) at regional quality group meetings
- Number of vascular procedure registries subscribed

These categories were selected by the SVS PSO Governing Council to emphasize the importance of center participation in three key areas. LTFU reporting demonstrates a commitment to monitoring the ongoing effectiveness of treatment, assessing potential problems and providing optimal medical management. LTFU allows a more meaningful assessment of quality (as opposed to only perioperative outcomes), and is a cornerstone of VQI. Physician and staff attendance at semi-annual regional quality group meetings is critical to drive discussions of outcome variation, to develop regional QI projects, and to encourage multi-center participation in outcomes analysis and QI efforts. Finally, participation in multiple procedure registries provides more opportunities for learning and improvement. It should be emphasized that this award does not represent the quality of care delivered, but rather is a measure of VQI participation, which we hope will translate into improved quality of care long-term.

To be eligible for the 2017 VQI Participation Award, centers must have been a VQI member for at least 12 months. Thus, centers that enrolled in 2017 were not eligible for this year’s VQI Participation Award. The goal for LTFU in VQI is reporting at one year after the index procedure. Since follow-up times vary, however, LTFU rate is calculated based on any follow-up reported after at least 9 months. For the 2017 VQI Participation Awards, LTFU is calculated based on procedures done in 2015 to allow two full years to record LTFU after the procedure. (Note that for centers that joined VQI in 2016, however, LTFU is
calculated based on procedures done in 2016, allowing only one year to obtain LTFU for the 2017 Participation Award.)

For 2017, there were 359 centers eligible for VQI Participation Awards, and we are pleased that 42 received 3 Stars, 91 received 2 Stars and 98 received 1 Star.

We plan to recognize centers that received the 2017 VQI Participation Award on the VQI website and in other publications. Regardless of how many “Stars” your center received, we hope that you will work to improve your participation in 2018. LTFU reporting is considered so important by the SVS PSO that we have created a toolkit based on lessons-learned from centers that have achieved high follow-up, which we hope you will find useful. It can be found in the resource tab of the VQI website: [http://www.vascularqualityinitiative.org/vqi-resource-library/long-term-follow-up/](http://www.vascularqualityinitiative.org/vqi-resource-library/long-term-follow-up/). Further, we can provide staff coaching and peer mentoring for centers that struggle with LTFU reporting. We look forward to working with all centers to enhance their participation in the Vascular Quality Initiative. If you have questions, please contact Carrie Bosela, c.bosela@svspso.org.

Sincerely yours,

Alex Shepard, MD, Chair, VQI Participation Award Committee
Larry Kraiss, MD, Chair, SVS PSO Governing Council
Jens Eldrup-Jorgensen, MD, SVS PSO Medical Director

4.2 2018 Participation Awards

The scoring measures for the 2018 Participation Awards have been expanded to four categories and now include activities related to the initiation of Quality Improvement projects. The four categories for the 2018 Awards include:

- Completion rate for Long Term Follow Up
- Attendance at the Semi-Annual Regional Meetings
- Activities related to initiation and dissemination of Quality Improvement projects
- Number of VQI registries subscribed

With the addition of the fourth component to the previous award: QI project involvement. Participation points can be earned by

- Initiation of a QI Project, evidenced by submitting a Project Charter
- Presenting a QI/Research Project (presentation or poster) at a Regional VQI or Regional Society Meeting
- Presenting a QI/Research Project (presentation or poster) at the National VQI or Vascular Annual Meeting
- Publish in a Peer Reviewed Journal
- Improvement of rates on National QI Initiatives, or maintaining excellent performance rates

With the addition of the Quality Improvement category, we also took the opportunity to modify the scoring system. Each category will be scored on a 0-6 point scale, with 6 points being the maximum allowed in any one area. The categories will then be weighted, with LTFU at 40%, Regional meeting attendance at 30%, Quality Improvement activities at 20% and number of registry subscriptions at 10%.
Based on this weighting, a site can achieve a total of 60 points, after weighting is applied. The breakdown of points needed to achieve star ratings are as follows:

- 3 Stars  > 40 points
- 2 Stars  27 – 40 points
- 1 Star   17 – 26 points
- 0 Stars  < 17 points

To be eligible for inclusion in the Participation Awards, a center must have been enrolled and collecting data for at least 12 months. Scoring for the 2018 Participation Awards will be calculated in January of 2019 and communicated to all VQI members in March 2019.

Additional Resources:

On November 30, 2017, the SVS PSO conducted a webinar to present the details of the new scoring system for the 2018 Participation Awards. You can obtain a replay of the webinar at: https://drive.google.com/file/d/1stntdJLExjxal5aTG9TF1JqENnpMNzU/view

We have also included a summary of the question and answer session from this webinar in a Word document. The Q&A summary can also be found on the web at https://www.vqi.org/wp-content/uploads/2018-Participation-Awards-QandA-from-11.30.2017-Webinar.pdf.

If you have any questions about the Participation Awards or the new scoring system for 2018, please contact Cheryl Jackson at cjackson@svspso.org or Jim Wadzinski at jwadzinski@svspso.org.