Mid-Atlantic Vascular Study Group (MAVSG)

May 9, 2019
7:00 – 9:00 AM
Union League
Philadelphia, PA
Welcome and Introductions

Abington Memorial Hospital
Associates in Vascular Care
Baltimore Washington Medical Center
Bayshore Medical Center
Beebe Medical Center
Capital Health Medical Center-Hopewell
Capital Health Regional Medical Center
Chester County Hospital
Christiana Care
Cooper University Hospital
Doylestown Hospital
Englewood Hospital and Medical Center
Geisinger Community Medical Center
Geisinger Medical Center
Geisinger Wyoming Valley Medical Center
Guthrie Clinic
Hackensack University Medical Center
Holy Spirit - Geisinger
Horizon Vascular Specialists
Inactive-Monmouth Medical Center
Jersey Shore University Medical Center
Johns Hopkins Bayview Medical Center
Johns Hopkins Hospital
Lancaster General Hospital
Lehigh Valley Hospital
Medical Faculty Associates, Inc
Medstar Georgetown University Hospital
Medstar Good Samaritan Hospital
Medstar Union Memorial Hospital
Mercy Medical Center
Newark Beth Israel Medical Center
Ocean Medical Center
Overlook Medical Center
Penn Presbyterian Medical Center
Penn State Milton S. Hershey Medical Center
Pennsylvania Hospital
Riverview Medical Center
Rutgers, The State University of New Jersey for Robert Wood Johnson Medical School
Saint Barnabas Medical Center
Southern Ocean Medical Center
St. Luke's Allentown Hospital
St. Luke's Anderson Hospital
St. Luke's Bethlehem Hospital
St. Luke's Quakertown Hospital
St. Luke's Warren Hospital
St. Mary Medical Center
The Reading Hospital and Medical Center
Thomas Jefferson University Hospital
University of Maryland Medical Center
University of Pennsylvania
Washington Hospital Center
Western Maryland Health System
National VQI Update:
Jens Jorgenson, MD, SVS PSO
558 VQI Centers
557 centers in North America
1 center in Singapore
18 Regional Quality Groups
<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Total Procedures Captured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Procedures Captured (as of 4/1/2019)</td>
<td>576,515</td>
</tr>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>183,464</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>118,587</td>
</tr>
<tr>
<td>Infra-inguinal Bypass</td>
<td>52,145</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>47,791</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>46,814</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>29,227</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>28,848</td>
</tr>
<tr>
<td>Supra-inguinal Bypass</td>
<td>17,360</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>14,228</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>13,901</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>12,157</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>11,993</td>
</tr>
</tbody>
</table>

**VQI Total Procedure Volume**

Total Procedure Volume tab reflects net procedures added to the registry for the month.
Major update to VQI website

- Redesign of Home page to provide better navigation
- Highlights on Home page for featured QI and News, as well as the Latest Articles
- Greater focus on regions, QI and data analysis in new sections
- Clearer Resources section, including Reporting and Registry Updates and a Directory in Contact Us

www.vqi.org

For feedback, contact Nancy Heatley, nheatley@svspso.org
Making our Data Better: Audits!

Data audits via Pathways have begun and will continue throughout the year, with a new audit scheduled for each month. The focus this year is on out of range data entries. So far:

- **Dec/Jan -- AVACCESS:** ~900 out of range data points audited across 9 data fields. Centers fixed/verified ~300 entries. The rest will be set to NULL.
- **Feb -- CEA:** ~1400 out of range entries audited across 20 data fields. After 3 weeks, 76% of those points had been fixed or verified.
- **March -- CAS out of range and stroke audit**
- **April -- Varicose Vein out of range**
- **May -- EVAR out of range and hours symp to repair**
- **June -- OAAA out of range and transfusion**
- **July -- IVCF**

The PSO has finalized an agreement with Q-Centrix (abstraction company) to begin doing third party audits. Details to be shared shortly.
2019 Reports:

• Quarter 1:
  – Spring Regional Reports,
  – QI Update: EVAR LTFU Imaging Update/Risk Calculator
  – Performance Awards

• Quarter 2:
  – QI Initiative Updates – DC meds and EVAR LTFU imaging
  – Center and System Dashboards

• Quarter 3:
  – Fall Regional Reports
  – QI Initiative Updates – DC meds and EVAR LTFU imaging
  – Center and System Dashboards

• Quarter 4:
  – QI Initiative Updates – DC meds and EVAR LTFU imaging
Sample EVAR Imaging Risk Calculator:

VQI Quality Initiative Report

Follow-Up Imaging With AAA Diameter Reported 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 post-surgery, with sac diameter recorded. Time from surgery to imaging - Date of follow-up visit where imaging was recorded - surgery date.

Long-term imaging after EVAR has been an SVS PSO National Quality Initiative for three years, but rates have remained stubbornly low: From 2013 to 2016, respectively, only 54%, 60%, 59% and 60% of EVAR patients received follow-up imaging between 9 and 21 months postop. The goal is for 100% of EVAR patients to have imaging at one year. Increased compliance with EVAR LTFU imaging is associated with reduced risk of rupture and improved patient survival.

Many VQI centers are beginning to identify best practices and conduct studies on EVAR LTFU imaging. To help all centers improve their imaging rates, this report identifies factors associated with loss to follow-up imaging and offers a patient screening tool that might be useful in planning follow-up care.

The table below shows your center’s imaging rate for 2016 cases and compares it with your region’s rate, the overall VQI rate, and your center’s 2015 rate.

<table>
<thead>
<tr>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of 2016 procedures at your center meeting inclusion criteria:</td>
</tr>
<tr>
<td>Number imaged (your center’s imaging rate):</td>
</tr>
<tr>
<td>75th percentile for 2016 cases among all VQI centers:</td>
</tr>
<tr>
<td>Your region’s rate for 2016 cases:</td>
</tr>
<tr>
<td>P-value for comparison of your center’s rate to your region’s rate:</td>
</tr>
<tr>
<td>Overall VQI rate for 2016 cases:</td>
</tr>
<tr>
<td>P-value for comparison of your center’s rate to the overall VQI rate:</td>
</tr>
<tr>
<td>Your center’s follow-up imaging rate for 2015 cases:</td>
</tr>
<tr>
<td>P-value for comparison of your center’s 2016 rate to its 2015 rate:</td>
</tr>
</tbody>
</table>

The graphic below shows the variation in the rate of follow-up imaging after EVAR among VQI centers. Such variation offers an enormous opportunity for improvement.
## Lost to EVAR LTFU Imaging Risk Score

<table>
<thead>
<tr>
<th>Patient characteristic</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt; 70 or &gt; 79</td>
<td>1</td>
</tr>
<tr>
<td>Non-white race</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic ethnicity</td>
<td>2</td>
</tr>
<tr>
<td>BMI &lt; 24</td>
<td>2</td>
</tr>
<tr>
<td>Not discharged home</td>
<td>6</td>
</tr>
<tr>
<td>Transfer patient (any admission status)</td>
<td>5</td>
</tr>
<tr>
<td>Non-elective admission, not transferred</td>
<td>2</td>
</tr>
<tr>
<td>Smoker</td>
<td>3</td>
</tr>
<tr>
<td>Creatinine &gt; 1.8 mg/dL or on dialysis</td>
<td>3</td>
</tr>
<tr>
<td>Not living at home</td>
<td>3</td>
</tr>
<tr>
<td>No family history of AAA</td>
<td>1</td>
</tr>
<tr>
<td>No completion endoleak</td>
<td>1</td>
</tr>
<tr>
<td>Lives &gt; 100 miles from hospital</td>
<td>5</td>
</tr>
<tr>
<td>Surgeon has &lt; 16 years’ experience</td>
<td>1</td>
</tr>
<tr>
<td>Score &gt; 2 on Frailty Index*</td>
<td>2</td>
</tr>
</tbody>
</table>

### Risk Category

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0-3</td>
</tr>
<tr>
<td>Medium</td>
<td>4-7</td>
</tr>
<tr>
<td>High</td>
<td>8+</td>
</tr>
</tbody>
</table>

*The “Frailty index” is a 0-9 score based on results from “Interaction Between Fraility and Sex on Mortality after Elective Abdominal Aortic Aneurysm Repair,” a manuscript under development by Sarah Barbey, Salvatore Scali and other VQI researchers.

**To calculate a patient’s Frailty Index,** add 1 point each if the patient has any of the following conditions preop: hypertension, compromised functional status, diabetes, chronic obstructive pulmonary disease, congestive heart failure, history of myocardial infarction or unstable angina, cardiac disease (prior percutaneous coronary intervention, cardiac surgery or stable angina), peripheral vascular disease (prior non-cardiac revascularization or major lower extremity amputation), cognitive impairment. Scores >2 are significantly associated with not receiving LTFU imaging.
## Risk factors for loss to LTFU imaging after EVAR

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Odds Ratio</th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt;70 or &gt;79</td>
<td>1.1</td>
<td>57.8%</td>
<td>54.7%</td>
<td>56.7%</td>
</tr>
<tr>
<td>Non-white race</td>
<td>1.1</td>
<td>1.6%</td>
<td>5.4%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Hispanic ethnicity</td>
<td>1.3</td>
<td><strong>0%</strong></td>
<td>1.9%</td>
<td>3.3%</td>
</tr>
<tr>
<td>BMI&lt;24</td>
<td>1.2</td>
<td>20.3%</td>
<td>20%</td>
<td>23.2%</td>
</tr>
<tr>
<td>Not discharged home</td>
<td>1.7</td>
<td>4.7%</td>
<td>8.5%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Any status, transferred (vs. elective, not trans.)</td>
<td>1.7</td>
<td><strong>14.1%</strong></td>
<td>8.1%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Non-elective, not trans. (vs. elective, not trans.)</td>
<td>1.2</td>
<td>1.6%</td>
<td>3.9%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Current smoker</td>
<td>1.3</td>
<td>31.2%</td>
<td>32.8%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Creatinine&gt;1.8 mg/dL or on dialysis</td>
<td>1.3</td>
<td>6.2%</td>
<td>5%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Not living at home</td>
<td>1.3</td>
<td><strong>0%</strong></td>
<td>0.6%</td>
<td>1.3%</td>
</tr>
<tr>
<td>No family history of AAA</td>
<td>1.1</td>
<td>92.2%</td>
<td>91.3%</td>
<td>92.9%</td>
</tr>
<tr>
<td>No completion endoleak</td>
<td>1.1</td>
<td>85.9%</td>
<td>73.6%</td>
<td>78.1%</td>
</tr>
<tr>
<td>Lives &gt;100 miles from home to hospital</td>
<td>1.6</td>
<td><strong>3.1%</strong></td>
<td>1.4%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Surgeon has &lt;16 years' experience (vs. 16+ years)</td>
<td>1.1</td>
<td>57.8%</td>
<td>64.7%</td>
<td>53.1%</td>
</tr>
<tr>
<td>Frailty index*≥2</td>
<td>1.2</td>
<td>37.5%</td>
<td>38.4%</td>
<td>40.5%</td>
</tr>
</tbody>
</table>
Educational Webinars 2018

January:  PVI Basic Form
February: LTFU Calculation Revisions
Close to release (TBD):
  - Varicose Vein Registry Changes
  - New Venous Stent Registry
  - Hemodialysis Registry Changes
  - New Medicine Registry
Quality Improvement Webinars:

- 2019 Quarterly Webinars
  - February 2019 “Starting a QI project”
  - May 2019
    - Educational – Methodology, QI tools
    - Case studies from participants
  - September 2019
    - Educational – Methodology, QI tools
    - Case studies from participants
  - November 2019
    - Wrapping up a QI project, 2020 Participation Award information
Recap of 2018 QI Projects

Putting Data into Action

• Fifty five participating sites
• Four categories – D/C Meds, LTFU, Clinical, and Documentation
• Success reported from those sites

See what your colleagues are doing re QI
## Quality Improvement Details: Charter Information

<table>
<thead>
<tr>
<th>Activity</th>
<th>Documentation</th>
<th>Score</th>
</tr>
</thead>
</table>
| **1. QI Project Initiation** | Attestation to include:  
- QI Project Title  
- Problem Statement  
- Project Leader  
- Clinical Sponsor  
- Expected start date  
Form can be accessed at [https://www.vqi.org/vqi-resource-library/quality-improvement/](https://www.vqi.org/vqi-resource-library/quality-improvement/)  
- Project charters should be emailed to Qi@SVSPSO.ORG | 2 points -  
*Due on or before 3/15/2019* |

- Will accept charters at any time during the year  
- *“Soft” due date of March 15th was set to:*  
  - Organize new charters into categories  
    - LTFU  
    - DJ/C Meds  
    - Clinical  
    - Documentation  
  - Give Cheryl a chance to review and provide suggestions to make your charter stronger  
  - Start new charter focused group calls  
    - Automatically included when charter submitted.  
    - Cheryl will reach out to you with information.  
    - New calls will start in late May  
- Will meet charter participants during the poster networking session at VQI@VAM
Charters

- Focused group calls
  - Interactive discussion sharing barriers and successes
  - Sharing of charters
  - Networking
  - Checking in – where are you in the process
  - Celebrating success

One on one calls, if requested.
Newsletters

- **The VQI News**
  - Distributed every other month
  - Provides updates on regulatory issues, technical updates, and crossover news from the SVS

- **VQI Quality Improvement Newsletter**
  - Distributed every other month
  - Focusing on QI processes, tools, and definitions
New Project

• SVS PSO work group to address national opioid epidemic with a focus on vascular patients. To develop recommendations based on work from National Academy of Medicine, Prescription Drug Monitoring Program (PDMP) and evidence-based practice.

• Led by Dr. Peter Henke - University of Michigan

• Meet at VAM. June 12-15, 2019 Gaylord Convention Center, National Harbor, MD (Washington, DC)
Participation Awards: 2018

• 50 sites earned 3 stars, 92 sites earned 2 stars and 54 earned 1 star (383 eligible sites)

• Overall median LTFU increased to 74% from 70% in the prior year

• 55 Charters were submitted as part of the new quality domain

• 119 centers qualified for a bonus point for Discharge Medications and 62 centers for EVAR LFTU, based on maintaining their standing in the top quartile or by achieving statistically significant improvement in these areas
Participation Awards:

• Awards were distributed in March

• 3 Star recipient to receive Certificates at Regional and National Meeting

• 1 & 2 Star centers will be sent a PDF of their Certificate

• Standardized Press Release was created for Star Awards.
Participation Award Results!!

Washington Hospital Center
Geisinger Community Medical Center
Guthrie Clinic
Hackensack University Medical Center

University of Pennsylvania
Penn State Milton S. Hershey Medical Center
Christiana Care
Geisinger Wyoming Valley Medical Center

St. Luke's Bethlehem Hospital
Geisinger Medical Center
St. Luke's Allentown Hospital
St. Luke's Anderson Hospital

Congratulations to all Star Awards
For general inquiries about the Participation Awards, please contact Cheryl Jackson at CJACKSON@SVSPSO.ORG or Jim Wadzinski at JWADZINSKI@SVSPSO.ORG.

Submit Project Charters and supporting documentation for presentations and posters to QI@SVSPSO.ORG.

Visit the VQI Members Only Website for webinars and presentations on VQI Quality Improvement Projects.
• **Tuesday 6/11 12:00 – 4:30pm:**
  Registry case abstractions.

• **Tuesday 6/11 5:00-6:30pm:**
  Poster/Networking

• **Wednesday 6/12 8:00am – 5:00pm:**
  – **AM** - QI activities-Podium presentations - abstract/poster submissions.
  – Update on VQI’s audit activities.
  – **PM** - Updates on National QI initiatives and Opioid Workgroup.
  – RAC research projects.
AQC Update: Dr. Grace Wang

- Harmonizing similar help text
- Updating all help text by the end of 2019 (using audit results to inform changes)
- IDE device clean up (Please do not enter an IDE as “other”)
- Other device clean up (Need more details, manufacturer, device name, product #)
- General Registry Updates (Infra, Supra and OAAA on deck for 2019)
RAC Update

• No Restriction of data release based on similar projects; collaboration is encouraged
• Only 1 refresh of data within 24 months of initial approval
• Industry related projects need to collaborate with the steering committee/s (i.e. TCAR)
  – Review policy and industry charters on the web
• Device Identification Policy: review on the web before submitting proposal
• **Varicose Vein Registry:**
  – revisions to decrease data entry only for “treated leg”
  – Early follow up requirement changing to < 30 days to capture early complications

• **IVC Filter:** feedback on temporary filter removal reminders?

• **Venous Stent Registry:** to be released soon!
Governing Council Update

• Vice Chairs elected:
  Randy DeMartino (AQC)
  Mark Passman (VQC)
• SSN Workgroup:
  Whitepaper being published to help administration understand our need for full SSN (Medicare claims matching and SSDI matching)
• Continued Guideline work with SVS, which has led to new reports in the regional slide decks
• Additional Centers added to the Cerner Abstraction Pilot
• Discussion on how to increase participation at Regional Meetings
Regional Reports:

Grace Wang, MD

1) In all reports, regional data are not shown if the region does not have at least 3 centers with at least 10 cases meeting inclusion criteria for each outcome in the applicable registry.
2) In “by Center” bar charts, unless noted, data are not shown for centers with <10 cases and for regions with <3 centers.
3) In all graphics, “*” indicates a p-value <.05.
4) This report includes all data that had been entered into the VQI as of Jan. 31, 2019.
The table below summarizes your center’s results as presented in each of the subsequent reports and provides regional and national benchmarks for comparison. In the “Your Center” column, percentages represent the rate of cases with the noted outcome. Numbers in parentheses are the number of cases with the outcome/the total number of cases meeting the inclusion criteria (see the full report for details). In the “Your Region” and “VQI Overall” columns, the numbers represent the 25th, 50th (median) and 75th percentiles for centers in your region and across all centers in the VQI. Percentiles are ordered so that a higher percentile always indicates better performance.

Your center’s results are highlighted in green if your center is at or above the 75th percentile nationally, in yellow if your center is among the middle 50% of centers, and in red if at or below the 25th percentile.

Unless otherwise noted, the timeframe for all outcomes is January 1-December 31, 2018. For more details about each outcome, click on the name of report in the table of contents at left.
### Dashboard

<table>
<thead>
<tr>
<th>Registry</th>
<th>Outcome</th>
<th>Your Center % (n/N)</th>
<th>Your Region [25p</th>
<th>50p</th>
<th>75p]</th>
<th>VQI Overall [25p</th>
<th>50p</th>
<th>75p]</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Total Procedure Volume</td>
<td>[28</td>
<td>58</td>
<td>182]</td>
<td>[37</td>
<td>125</td>
<td>315]</td>
<td></td>
</tr>
<tr>
<td>Multiple (Jan-Dec 2016)</td>
<td>Long-Term Follow-Up</td>
<td>[25%</td>
<td>60%</td>
<td>90%]</td>
<td>[50%</td>
<td>78%</td>
<td>89%]</td>
<td></td>
</tr>
<tr>
<td>Multiple</td>
<td>Discharge Medications</td>
<td>[78%</td>
<td>80%</td>
<td>92%]</td>
<td>[75%</td>
<td>84%</td>
<td>92%]</td>
<td></td>
</tr>
<tr>
<td>AVACCESS</td>
<td>Primary AVF vs. Graft</td>
<td>[71%</td>
<td>80%</td>
<td>90%]</td>
<td>[77%</td>
<td>85%</td>
<td>93%]</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>In-Hospital Stroke/Death</td>
<td>[0%</td>
<td>0%</td>
<td>0%]</td>
<td>[2%</td>
<td>0%</td>
<td>0%]</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>In-Hospital Stroke/Death</td>
<td>[0%</td>
<td>0%</td>
<td>0%]</td>
<td>[1%</td>
<td>0%</td>
<td>0%]</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>LOS&gt;1 Day</td>
<td>[35%</td>
<td>24%</td>
<td>12%]</td>
<td>[31%</td>
<td>22%</td>
<td>13%]</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>LOS&gt;2 Days</td>
<td>[22%</td>
<td>14%</td>
<td>7%]</td>
<td>[17%</td>
<td>10%</td>
<td>4%]</td>
<td></td>
</tr>
<tr>
<td>EVAR (Jan-Dec 2016)</td>
<td>Sac Diameter at LTFU</td>
<td>[53%</td>
<td>71%</td>
<td>77%]</td>
<td>[36%</td>
<td>60%</td>
<td>75%]</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>Major Complications</td>
<td>[6%</td>
<td>0%</td>
<td>0%]</td>
<td>[6%</td>
<td>0%</td>
<td>0%]</td>
<td></td>
</tr>
<tr>
<td>IVCF (July 2017-June 2018)</td>
<td>Filter Retrieval</td>
<td>NA (&lt;3 centers)</td>
<td>[0%</td>
<td>17%</td>
<td>39%]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>Postop Complications</td>
<td>NA (&lt;3 centers)</td>
<td>[17%</td>
<td>11%</td>
<td>4%]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>In-Hospital Mortality</td>
<td>NA (&lt;3 centers)</td>
<td>[0%</td>
<td>0%</td>
<td>0%]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>ABI/TBI Reported</td>
<td>[75%</td>
<td>82%</td>
<td>92%]</td>
<td>[65%</td>
<td>82%</td>
<td>92%]</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>Postop Complications</td>
<td>NA (&lt;3 centers)</td>
<td>[0%</td>
<td>0%</td>
<td>0%]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEVAR (Jan-Dec 2016)</td>
<td>Sac Diameter at LTFU</td>
<td>[32%</td>
<td>37%</td>
<td>69%]</td>
<td>[21%</td>
<td>40%</td>
<td>62%]</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>Sac Size Guideline</td>
<td>[55%</td>
<td>64%</td>
<td>79%]</td>
<td>[50%</td>
<td>58%</td>
<td>71%]</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>Iliac Inflow Guideline</td>
<td>[100%</td>
<td>100%</td>
<td>100%]</td>
<td>[99%</td>
<td>100%</td>
<td>100%]</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>Cell-Saver Guideline</td>
<td>NA (&lt;3 centers)</td>
<td>[93%</td>
<td>100%</td>
<td>100%]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>Iliac Inflow Guideline</td>
<td>NA (&lt;3 centers)</td>
<td>[100%</td>
<td>100%</td>
<td>100%]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Total Procedure Volume, All Years

Includes all procedures entered in VQI as of Jan. 31, 2019

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Your Center (N)</th>
<th>Your Region (N)</th>
<th>VQI Overall (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVACCESS</td>
<td>1406</td>
<td>43147</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>2050</td>
<td>25969</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>7747</td>
<td>112906</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>3297</td>
<td>44323</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>2876</td>
<td>48823</td>
<td></td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>11105</td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>12896</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>592</td>
<td>11436</td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>12773</td>
<td>168342</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>989</td>
<td>16146</td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td>1287</td>
<td>12579</td>
<td></td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
<td>25610</td>
<td></td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>34192</strong></td>
<td><strong>533282</strong></td>
<td></td>
</tr>
</tbody>
</table>
Physician Specialties Across Your Region (as of Jan. 31, 2019, N=320 Physicians)
## Percentage of Procedures with 9 Months or Greater Follow-Up

Procedures performed between Jan. 1 and Dec. 31, 2016

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2016, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of procedures in the VQI, and the percentage of those procedures with long-term follow-up.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVACCESS</td>
<td>198 (82%)</td>
<td>6977 (71%)</td>
</tr>
<tr>
<td>CAS</td>
<td>290 (65%)</td>
<td>3709 (67%)</td>
</tr>
<tr>
<td>CEA</td>
<td>1087 (78%)</td>
<td>16217 (73%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>428 (87%)</td>
<td>6202 (75%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>399 (82%)</td>
<td>6726 (77%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>1906 (66%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>2037 (74%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>NA (&lt;3 centers)</td>
<td>1164 (73%)</td>
</tr>
<tr>
<td>PVI</td>
<td>1876 (72%)</td>
<td>24524 (76%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>120 (85%)</td>
<td>2208 (74%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>216 (75%)</td>
<td>2017 (70%)</td>
</tr>
<tr>
<td>2016 Overall</td>
<td>4833 (76%)</td>
<td>73687 (74%)</td>
</tr>
<tr>
<td>2015 Overall</td>
<td>4207 (79%)</td>
<td>70365 (75%)</td>
</tr>
</tbody>
</table>
Percentage With Long-Term Follow-Up by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Long-Term Follow-Up by Center in Your Region (Jan-Dec 2016)

Centers (centers with <10 cases not shown)

*** indicates center’s rate differs significantly from the regional rate.

Long-Term Follow-Up by Region Across VQI (Jan-Dec 2016)

Regions (regions with <3 centers with at least 10 cases not shown)

“Others” indicates centers that do not belong to a regional group. *** indicates region’s rate differs significantly from the VQI rate.
Discharge Medications Procedures performed between Jan 1, 2018 and Dec 31, 2018 and entered by Jan 31, 2019

Excludes patients who died in hospital and patients who were not treated for medical reason or non-compliant. “Antiplatelet” is defined as ASA or P2Y12 inhibitor
Percentage Receiving Discharge Antiplatelet+Statin by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Discharge Antiplatelet+Statin Rate by Center in Your Region (Jan-Dec 2018)

Other centers in your region | Your center

Centers (centers with <10 cases not shown)

*** indicates center's rate differs significantly from the regional rate.

Discharge Antiplatelet+Statin Rate by Region Across VQI (Jan-Dec 2018)


Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region's rate differs significantly from the VQI rate.
Hemodialysis Access: Percentage of Primary AVF vs. Graft

Procedures performed between Jan. 1 and Dec. 31, 2018
Excludes patients with previous access procedure in the same arm.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of access procedures meeting the inclusion criteria in the VQI, and the percentage of those cases that were AVF vs. graft.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of access procedures meeting inclusion criteria</td>
<td></td>
<td>191</td>
<td>5323</td>
</tr>
<tr>
<td>Percentage with primary AVF</td>
<td></td>
<td>78%</td>
<td>83%</td>
</tr>
</tbody>
</table>
Rate of Primary AVF Access by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Primary AVF Access in Your Region (Jan-Dec 2018)

Centers (centers with <10 cases not shown)

"***" indicates center's rate differs significantly from the regional rate.

Rate of Primary AVF Access by Region Across VQI (Jan-Dec 2018)

Regions (regions with <3 centers with at least 10 cases not shown)

"***" indicates region's rate differs significantly from the VQI rate.
Carotid Artery Stent: Stroke or Death in Hospital

Procedures performed between Jan. 1 and Dec. 31, 2018

Elective procedures, excluding prior ipsilateral CAS, CAS for intracranial treatment and dissection, trauma and “other” lesion types

The table below shows the number of CAS procedures meeting the inclusion criteria that were in the VQI as of Jan. 31, 2019, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CAS procedures meeting inclusion criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.
Rate of In-Hospital Stroke or Death After CAS by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Carotid Endarterectomy: Stroke or Death in Hospital

Procedures performed between Jan. 1 and Dec. 31, 2018

Elective procedures, excluding prior ipsilateral CEA and concomitant CABG, endovascular or other arterial procedure

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of CEA procedures meeting the inclusion criteria in the VQI, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>976</td>
<td>14325</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>1%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>935</td>
<td>13641</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>1%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>1%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>1</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.
Rate of In-Hospital Stroke or Death After CEA by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of In-Hospital Stroke or Death After CEA in Your Region (Jan-Dec 2018)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

"***" indicates center's observed rate differs significantly from its expected rate.

Rate of In-Hospital Stroke or Death After CEA by Region Across VQI (Jan-Dec 2018)

- Observed
- Expected

Regions (regions with <3 centers with at least 10 cases not shown)

"***" indicates region's observed rate differs significantly from its expected rate.
Carotid Endarterectomy: Percentage of Patients with LOS>1 Day

Procedures performed between Jan. 1 and Dec. 31, 2018

Elective procedures, excluding prior ipsilateral CEA, concomitant CABG, proximal endovascular or other arterial operation, in-hospital death with LOS≤1 day, procedures done on weekends or not done on admission day. LOS is based on the midnight rule used for hospital billing.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of CEA procedures meeting inclusion criteria in the VQI, and the observed and expected rates of those cases with LOS>1 Day.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>930</td>
<td>12806</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>24%</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>890</td>
<td>12294</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 among cases with complete data</td>
<td>24%</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 among cases with complete data*</td>
<td>23%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.45</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.
Rate of CEA Patients With LOS>1 Day by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of CEA Patients With LOS>1 Day in Your Region (Jan-Dec 2018)

Other centers in your region  Your center

Observed  Expected

Centers (centers with <10 cases not shown)

*** indicates center's observed rate differs significantly from its expected rate.

Rate of CEA Patients With LOS>1 Day by Region Across VQI (Jan-Dec 2018)


Observed  Expected

Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region's observed rate differs significantly from its expected rate.
Endovascular AAA Repair: Percentage of Patients with LOS>2 Days

Procedures performed between Jan. 1 and Dec. 31, 2018

Excludes ruptured aneurysms and in-hospital deaths with LOS>2 days, patients with prior aortic surgery, procedures not done on day of admission and weekend procedures. LOS is based on the midnight rule used for hospital billing.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of EVAR procedures meeting the inclusion criteria and the observed and expected rates of those cases with LOS>2 Days.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures meeting inclusion criteria</td>
<td>323</td>
<td>5133</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>302</td>
<td>4806</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among cases with complete data</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 among cases with complete data*</td>
<td>13%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.16</td>
<td>NA</td>
</tr>
</tbody>
</table>

*"Expected rate" is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. "Cases with complete data" include patients who have data on all of those factors.
Rate of EVAR Patients With LOS>2 Days by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of EVAR Patients With LOS>2 Days in Your Region (Jan-Dec 2018)

- Other centers in your region
- Your center
- Observed
- Expected

Centers (centers with <10 cases not shown)

"***" indicates center’s observed rate differs significantly from its expected rate.

Rate of EVAR Patients With LOS>2 Days by Region Across VQI (Jan-Dec 2018)

- Observed
- Expected

Regions (regions with <3 centers with at least 10 cases not shown)

"***" indicates region’s observed rate differs significantly from its expected rate.

EVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up

Procedures performed between Jan. 1 and Dec. 31, 2016

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2016, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of EVAR procedures in the VQI, and the percentage of those cases in which the patient had a follow-up visit between 9 and 21 months post-surgery at which a sac diameter was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures</td>
<td></td>
<td>428</td>
<td>6202</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td></td>
<td>65%</td>
<td>56%</td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of LTFU Sac Diameter Reporting in Your Region (Jan-Dec 2016)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

*** indicates center's rate differs significantly from the regional rate.

Rate of LTFU Sac Diameter Reporting by Region Across VQI (Jan-Dec 2016)

Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region's rate differs significantly from the VQI rate.
Infrainguinal Bypass: Rate of Major Complications

Procedures performed between Jan. 1 and Dec. 31, 2018

Includes only patients with indication of rest pain or tissue loss. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation or graft occlusion.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of INFRA cases with indication of rest pain or tissue loss in the VQI, and the percentage of those cases that resulted in in-hospital death, ipsilateral amputation or graft occlusion.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of INFRA procedures meeting inclusion criteria</td>
<td>273</td>
<td>4033</td>
<td></td>
</tr>
<tr>
<td>Percentage with major complications after INFRA</td>
<td>4.8%</td>
<td>3.8%</td>
<td></td>
</tr>
</tbody>
</table>
Rate of Major Complications After INFRA by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Major Complications After INFRA in Your Region (Jan-Dec 2018)

Centers (centers with <10 cases not shown)

*** indicates center's rate differs significantly from the regional rate.

Rate of Major Complications After INFRA by Region Across VQI (Jan-Dec 2018)

*** indicates region's rate differs significantly from the VQI rate.
IVCF: Percentage of Temporary Filters With Retrieval or Attempt at Retrieval

Procedures performed between July 1, 2017 and June 30, 2018

Excludes patients with permanent filters and patients who have died since discharge.

Data for this report include all cases with surgery date between July 1, 2017 and June 30, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of IVCF procedures meeting the inclusion criteria in the VQI, and the percentage of those cases in which the filter was retrieved, or an attempt was made to retrieve it, at any time post-procedure.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of procedures meeting inclusion criteria</td>
<td>NA (&lt;3 centers)</td>
<td>1376</td>
<td></td>
</tr>
<tr>
<td>Percentage with filter retrieval, or attempt at retrieval</td>
<td>38%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because not clinically indicated</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because patient declined</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rate of IVCF Retrieval by Region Across VQI (July 2017-June 2018)**

Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region’s rate differs significantly from the VQI rate.
Lower-Extremity Amputation: Rate of Postop Complications

Procedures performed between Jan. 1 and Dec. 31, 2018

Complications are defined as myocardial infarction, dysrhythmia, congestive heart failure, surgical site infection, renal and/or respiratory complication.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of LEAMP cases in the VQI, and the percentage of those cases that resulted in complication.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of amputation procedures</td>
<td>NA (&lt;3 centers)</td>
<td></td>
<td>3109</td>
</tr>
<tr>
<td>Percentage with complications after LEAMP</td>
<td></td>
<td></td>
<td>12%</td>
</tr>
</tbody>
</table>

Rate of Complications After LEAMP by Region Across VQI (Jan-Dec 2018)

Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region’s rate differs significantly from the VQI rate.
Non-Ruptured Open AAA: In-Hospital Mortality

Procedures performed between Jan. 1 and Dec. 31, 2018

Excludes ruptured aneurysms.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of OAAA procedures meeting the inclusion criteria in the VQI, and the observed and expected rates of in-hospital death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OAAA procedures meeting inclusion criteria</td>
<td>NA (&lt;3 centers)</td>
<td>986</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures meeting inclusion criteria</td>
<td>4.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>891</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among cases with complete data</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected rate of in-hospital death among cases with complete data*</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with infrarenal proximal clamp</td>
<td>3.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with suprarenal proximal clamp</td>
<td>4.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*"Expected rate" is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. "Cases with complete data" include patients who have data on all of those factors.
Rate of In-Hospital Death After OAAA by Region Across VQI (Jan-Dec 2018)

- **Observed**
- **Expected**

Regions (regions with <3 centers with at least 10 cases not shown)

"*** indicates region's observed rate differs significantly from its expected rate."
**PVI: Percentage of Claudicants with ABI/Toe Pressure Reported Before Procedure**

Procedures performed between Jan. 1 and Dec. 31, 2018

“ABI or toe pressure reported” indicates at least one measure was recorded for the side of the operation, or on both sides for bilateral and aortic procedures.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of PVI procedures with indication of claudication in the VQI, and the percentage of those cases in which ABI or toe pressure was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PVI procedures with indication of claudication</td>
<td>873</td>
<td></td>
<td>12822</td>
</tr>
<tr>
<td>Percentage with ABI/toe pressure recorded before procedure</td>
<td>79%</td>
<td></td>
<td>77%</td>
</tr>
<tr>
<td>Percentage who were current smokers</td>
<td>36%</td>
<td></td>
<td>39%</td>
</tr>
</tbody>
</table>
Rate of ABI/TBI Assessment Before PVI by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of ABI/TBI Assessment Before PVI in Your Region (Jan-Dec 2018)

Centers (centers with <10 cases not shown)

*** indicates center’s rate differs significantly from the regional rate.

Rate of ABI/TBI Assessment Before PVI by Region Across VQI (Jan-Dec 2018)

Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region’s rate differs significantly from the VQI rate.
Suprainguinal Bypass: Rate of Major Complications

Procedures performed between Jan. 1 and Dec. 31, 2018

Includes only patients with indication of rest pain or tissue loss. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation or graft occlusion.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of SUPRA cases in the VQI, and the percentage of those cases that resulted in complication.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of SUPRA procedures</td>
<td></td>
<td>NA (&lt;3 centers)</td>
<td>793</td>
</tr>
<tr>
<td>Percentage with major complications after SUPRA</td>
<td></td>
<td></td>
<td>5%</td>
</tr>
</tbody>
</table>

Rate of Major Complications After SUPRA by Region Across VQI (Jan-Dec 2018)

Regions (regions with <3 centers with at least 10 cases not shown)

“***” indicates region’s rate differs significantly from the VQI rate.
TEVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up

Procedures performed between Jan. 1 and Dec. 31, 2016

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2016, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of TEVAR procedures in the VQI, and the percentage of those cases in which the patient had a follow-up visit between 9 and 21 months post-surgery at which a sac diameter was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TEVAR procedures</td>
<td></td>
<td>216</td>
<td>2017</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td></td>
<td>42%</td>
<td>43%</td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of LTFU Sac Diameter Reporting in Your Region (Jan-Dec 2016)

Other centers in your region □ Your center

Centers (centers with <10 cases not shown)

*** indicates center’s rate differs significantly from the regional rate.

Rate of LTFU Sac Diameter Reporting by Region Across VQI (Jan-Dec 2016)


Regions (regions with <3 centers with at least 10 cases not shown)

*** indicates region’s rate differs significantly from the VQI rate.
New SVS Guideline Reports Using VQI Data!!
EVAR: Percentage of Elective Patients with AAA Diameter Within SVS Guideline (≥5.5cm for Men; ≥5 cm for Women)

Procedures performed between Jan. 1 and Dec. 31, 2018
Excludes non-elective procedures.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of elective EVAR procedures in the VQI, and the percentage of those cases meeting the SVS sac size guideline.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of elective EVAR procedures</td>
<td>346</td>
<td>5445</td>
<td></td>
</tr>
<tr>
<td>Percentage meeting SVS sac size guideline</td>
<td>63%</td>
<td>60%</td>
<td></td>
</tr>
</tbody>
</table>
Rate of EVAR Cases Meeting Sac Size Guideline by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of EVAR Cases Meeting Sac Size Guideline in Your Region (Jan-Dec 2018)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

“**” indicates center's rate differs significantly from the regional rate.

Rate of EVAR Cases Meeting Sac Size Guideline by Region Across VQI (Jan-Dec 2018)

- Virginias*
- New York*
- SOVONET*
- Southeast*
- Midwest*
- VQI
- Rocky Mtns.
- New England
- Mid-America
- So. Cal.
- Up.
- Midwest
- Mid-Atlantic
- Carolinas
- Michigan
- Pacific NW
- G. Lakes*
- Canada*

Regions (regions with <3 centers with at least 10 cases not shown)

“**” indicates region's rate differs significantly from the VQI rate.
Preserve flow to at least one Internal Iliac Artery
– Univariate analysis

• Open AAA – worse SSI, in-patient mortality and 1 year mortality
Preserve flow to at least one Internal Iliac Artery
Multivariable analysis

• Open AAA – worse 1 year mortality
OAAA: Percentage of Patients Meeting SVS Cell Saver Guideline (Cell Salvage or Ultrafiltration Device Used if EBL>500 ml)

Procedures performed between Jan. 1 and Dec. 31, 2018
Excludes patients with EBL≤500 ml.

Data for this report include all cases with surgery date between Jan. 1 and Dec. 31, 2018, that had been entered into the VQI as of Jan. 31, 2019. The table below shows the number of OAAA procedures with EBL>500 ml in the VQI, and the percentage of those cases meeting the SVS cell-saver guideline.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OAAA procedures meeting inclusion criteria</td>
<td>NA (&lt;3 centers)</td>
<td>1003</td>
</tr>
<tr>
<td>Percentage meeting cell-saver guideline</td>
<td></td>
<td>94%</td>
</tr>
</tbody>
</table>
Rate of OAAA Cases Meeting Cell-Saver Guideline by Region Across VQI (Jan-Dec 2018)

Regions (regions with <3 centers with at least 10 cases not shown)

"**" indicates region's rate differs significantly from the VQI rate.
Autotransfusion during open AAA — 30-100%

Room for Improvement
Focus for QI efforts
Use of Autotransfusion during open AAA –

• Inhospital Mortality – 9% vs 18%
• One year Mortality – 14% vs 25%
• Adherence to use of cell saver had decreased inpatient and one year mortality following open AAA repair
Meeting Evaluation:

• What did you like about this meeting?
• What can we do better?
• Next meeting location: