Mid-America Vascular Study Group

April 10, 2017
10:00 am - 3:00 pm
University of Kansas Health System
Kansas City, KS
Vascular Quality Initiative

Agenda:

I. Welcome and Introduction
   Joe Schneider, MD

II. Follow up on Fall meeting
    Joe Schneider, MD

III. National VQI Update
     Nadine Caputo, PSO

IV. Regional Data Review
    Joe Schneider, MD

VI. AQC Update
    Todd Vogel, MD

VII. RAC Update
     Andrew Hoel, MD

VII. VQC Update
     Ravi Hasanadka, MD

VIII. Governing Council Committee Update
      Joe Schneider, MD

IX. M2S: Development Update
    Debbie MacAulay, M2S

X. Expanding Participation

XI. Next Meeting and Adjourn
Welcome and Introductions

Barnes Jewish Hospital
Carle Foundation Hospital
Iowa Heart Center at Mercy Medical Center
Mercy Hospital Springfield
Mercy Hospital St. Louis
NorthShore Hospital
Central DuPage Hospital
Northwestern Memorial Hospital
OSF Saint Anthony Medical Center
OSF Saint Francis Medical Center
OSF St. Joseph Medical Center
Saint Luke’s Episcopal Presbyterian Hospital
Saint Luke's Hospital of Kansas City
Southern Illinois University School of Medicine

SSM DePaul Health Center
SSM Saint Louis University Hospital
SSM St. Clare Health Center
SSM St. Joseph Health Center
SSM St. Mary's Health Center
St. Mary's Hospital - Decatur
Nebraska Medicine
UnityPoint Health Des Moines
UnityPoint Health - Methodist
University of Chicago Medical Center
University of Kansas Hospital Authority
Columbia Surgical Services- Inc.
University of Missouri Medical Center
Weiss Memorial Hospital
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Action Items from last Meeting

• LTFU transparency
National VQI Update: 
Nadine Caputo, SVS PSO 
ncaputo@svspso.org
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Participating Centers

VQI Participating Centers

412 Centers, 46 States + Canada
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17 Regional Quality Groups

- Pacific NW Vascular Study Group
- Mid-America Vascular Study Group
- Rocky Mountain Vascular Quality Initiative
- Upper Midwest Vascular Network
- Midwest Vascular Collaborative
- Great Lakes Vascular Study Group
- Vascular Study Group of New England
- Vascular Study Group of Greater New York
- Mid-Atlantic Vascular Study Group
- Virginias Vascular Study Group
- Carolinas Vascular Quality Group
- MidSouth Vascular Study Group
- Southern Vascular Outcomes Network
- Southeastern Vascular Study Group

AK
HI
Total Procedure Volume tab reflects net procedures added to the registry for the month.

VQI Total Procedure Volume

<table>
<thead>
<tr>
<th>Total Procedures Captured (as of 4/1/2017)</th>
<th>363,960</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>114,599</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>80,875</td>
</tr>
<tr>
<td>Infra-Inguinal Bypass</td>
<td>36,281</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>32,485</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>30,362</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>14,687</td>
</tr>
<tr>
<td>Supra-Inguinal Bypass</td>
<td>12,307</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>10,219</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>9,355</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>8,479</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>7,229</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>7,082</td>
</tr>
</tbody>
</table>
Mid America Vascular Study Group

Join your Mid-America Vascular Study Group peers in the VQI. We are a group of hospitals and vascular specialists in Illinois, Iowa, Missouri, Nebraska and Kansas who have committed to collecting, sharing, and analyzing data related to vascular interventions and outcomes.

Our goal is to improve outcomes for our patients and to explore the factors that predict the best outcomes. We take advantage of the rapidly accumulating data that come from collaboration with other interested groups.

The Vascular Study Group of New England, and more recently other Regional Quality Groups, have shown us how much can be accomplished with such a regional collaboration.

If you perform vascular surgery or other vascular interventions and work in Illinois, Iowa, Missouri, Nebraska and Kansas we would be delighted to talk with you about joining the MAVSG.

I would be happy to hear from you by email at joe.schneider@cadencehealth.org or at 630-933-4487.

- Joe Schneider, MD
  Northwestern Medicine Central DuPage Hospital Medical Director, Mid-America Vascular Study Group

Get started

The Mid-America Vascular Study Group

Our Mid-America Vascular Study Group is a voluntary, cooperative group of clinicians, hospital administrators, and research personnel organized to improve the care of patients with vascular disease.

By collecting and exchanging information, our group strives to continuously improve the quality, safety, effectiveness and cost of caring for patients with vascular disease.
Member Only Website

• Purpose: To help and encourage members to share quality improvement and best practice information more easily between and within Regional Quality Groups.

• The site will include a new *topical discussion forum* for VQI members that is password protected.

• Lead Regional Data Managers are currently pilot testing the site and we expect it to be operational 2\textsuperscript{nd} quarter 2017.
Summary Description

The Members Only area is a set of web pages which are password protected and designed for use by VQI Regional Data Managers, Data Managers/Hospital Managers, Physicians and other VQI members. These pages should introduce you to the new pages and functionality. The Members Only area consists of a National Shared Area, a Regional Shared Area and Members’ Forums.

Accessing the Members Only Area

From the VQI Home page top right, you will see a new option: “Members Login”. Click here to access the Login Screen.
MEMBERS’ FORUMS

The Members’ Forums are areas for discussion and initially these Forums have been set up for each of the 12 Registries, Long Term Follow Up and a General Forum for general questions.

We also have the ability to create “sub-forums” for areas, depending on the needs of the users and the complexity. Creating Forums and Sub-Forums can only be done by Admin, but Topics can be added by all users.
VQI@VAM 2017 Is Coming to San Diego

- Date: Tuesday, May 30, 2017 (half day) through Wednesday, May 31st (full day)
- Place: San Diego Convention Center, San Diego, CA
- Housing and Registration to open in early-March (Check the SVS website)
VQI@VAM 2017 Is Coming to San Diego

- Tuesday Afternoon will be concurrent sessions on the Registries
  - Inclusion/Exclusion
  - Difficult Definitions
  - Case Abstraction Scenarios

- Poster Session and Networking Reception from 5:00 – 6:30
  - Abstract submission deadline March 15, 2017
  - Notification of acceptance March 31, 2017
  - Send Abstracts to Jim Wadzinski
    jwadzinski@svspso.org
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VQI@VAM 2017 Is Coming to San Diego

• Wednesday Sessions will Include the Following Topics:
  – Registry Overview and Q&A
  – QI Case Studies on Data and Reporting
  – Physician Engagement in Data Collection
  – Data Automation
  – Keynote: VQI Quality Initiatives and Future Direction
  – QI Case Studies on Process and Outcomes Measures
  – Perspectives on VQI from the Hospital C-Suite
  – ERAS, Fast Track and Strong for Surgery: Applying these concepts to Vascular
  – Current Research Projects from Approved RAC Requests
Volume 8

In the February 2017 issue we highlight the following topics:

• VQI@VAM 2017 Is Coming to San Diego
• Two New National QI Projects
• Educational Webinars 2017
• VQI Participation Awards Update
• Welcome to New VQI Members
• Vascular Nurses and Technologists to Attend SVN Annual Convention
• Research Corner – PVI Studies
• Latest VQI Participation and Volume Statistics

VQI@VAM 2017 Is Coming to San Diego

Date: Tuesday, May 30, 2017 (half day) through Wednesday, May 31st (full day)
Place: San Diego Convention Center, San Diego, CA

For second annual VQI@VAM meeting, we have added a half day of programming on Tuesday, May 30th specifically for data managers. The half day program begins at noon on Tuesday May 30th and ends at 5:00pm with a Cocktail/Reception in response to member requests for additional time to network. The full day meeting on Wednesday May 31st for physicians and data managers is tentatively scheduled to begin at 8:00am through 5:00pm. A complete agenda will be available later in February.

To support your attendance at VQI@VAM, we have developed a sample justification letter that you can use with your administrators. (Click here to download Sample Justification Letter)
Two New National QI Projects
The SVS PSO is launching two national initiatives together with implementation tools aimed squarely at using data to improve patient care.

✓ Prescribing anti-platelets and statins to appropriate patients to improve their long-term vascular health
✓ Increasing follow-up imaging rates at one year for endovascular aneurysm repair patients

The goal for both of these initiatives is 100% compliance. To support increased compliance, the PSO, working with the Arterial Quality Council and the Quality Improvement Workgroup, is developing implementation tools for members, issuing comparative reports and data on improvements over time.
SVS PSO Launches 2 National Initiatives

The SVS Patient Safety Organization (SVS PSO) is launching two national initiatives aimed at improving patient care with a data-driven approach. They are:

- Reminding vascular surgeons to prescribe antiplatelet agents and statins to vascular patients to improve long-term outcomes, led by Dr. Randall R. DeMartino, co-chair of the Vascular Medicine Registry.
- Promoting follow-up imaging at one year for endovascular aneurysm repair (EVAR) patients, led by Dr. Salvatore Scali, EVAR registry chair.

For both initiatives, the SVS PSO is creating toolkits and educational webinars for members, promoting best practices and offering comparative benchmarks. “We issue reports and registry data that show that certain practices can improve patients’ outcomes,” said Dr. Jens Eldrup-Jorgensen, SVS PSO medical director. “We also provide biannual data releases to help hospitals assess their performance over time and in comparison to other facilities nationally and within their region.”

Discharge medications

For example, the Vascular Quality Initiative (VQI) released data last year on the impact of prescribing statins after discharge and how it improved patient outcomes. Patients on statins and antiplatelet agents had an impressive improvement in five-year survival rates compared to patients on neither medication, or on only one. Members found the data so compelling that the SVS PSO is expanding the initiative at the local and national levels.

Two components are essential for improvement: proper discharge planning and follow-up information and patient education/compliance.

“Two components are a number of ways that high-performing hospitals facilitate the process,” said Dr. Adam Beck, chair of the Arterial Quality Committee. “Some have instituted new standing orders and reminders in their electronic medical records, or have nurse navigators work one-on-one with patients to make sure they have the appropriate prescriptions.” It is critical that patients understand the importance of taking their medications before they leave the hospital and then maintain contact with their vascular surgeon, he said.

EVAR Long-term Follow-up Imaging

The second initiative emphasizes the importance of long-term follow-up care – with imaging as a crucial component – for EVAR patients.

“We feel surgeons should follow up close to 100 percent of their patients at one year after EVAR with imaging,” said Dr. Eldrup-Jorgensen. “Currently those figures aren’t as high as they should be.”

The imaging – MRI, CT or ultrasound – at one year is vital to document the adequacy of the AAA repair, he said. Noninvasive imaging is critical to assessing the success of the aneurysm repair and determining the presence of an endoleak that might require re-intervention.

Both national quality initiatives require continuous effort and rely upon data to monitor the effectiveness of these efforts, said Dr. Beck. “We issue hospital and physician reports every six months; providers have to be conscious of checking their data to be sure quality improvements stay in place,” he said. Information now being collected underscores the importance of developing and maintaining long-term relationships with patients – a practice SVS members not only embrace but also prize.

“It’s exciting to know that VQI members are using this registry data to improve care,” said Dr. Eldrup-Jorgensen. “The mission of VQI is to improve the care of the vascular patient and we are pleased that we can provide data that allows providers to improve their care and up their game.”

For more information, contact Nadine Caputo, quality director, at ncaputo@svspso.org.
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VQI QI Resources

- New on-line QI resources are available within VQI M2S PATHWAYS in the Resources Section:
  - *Leading Change* webinar slides and audio transcripts on change management by Dr. Ted James
  - Slides from all of the VQI@VAM 2016 presentations
  - Digital QI Project Guide – a ‘soup to nuts’ guide for QI project implementation.
# QI Project Charter – Template

## Project Overview

**Problem Statement:**

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**Goal:**

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**Scope:**

---

**Deliverable(s):**

---

**Resources Required:**

---

## Key Metrics

### Outcome Metrics:

<table>
<thead>
<tr>
<th>Milestone / Description</th>
<th>Date (mm/yy):</th>
</tr>
</thead>
</table>

### Process Metrics:

---

## Team Members

<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>
## Project Overview

### Problem Statement: Discharge Medication Example from Hospital A

Only 61% of eligible vascular procedure patients at Hospital X are discharged on antiplatelets and statins. Increasing the prescribing rate of antiplatelet and statin therapy for vascular procedure patients at discharge increases graft patency and increases survival at one year and five years post procedure.

### Problem Statement

What is wrong with our current process? Why do we care? Create a statement that is specific, measurable and relevant. Include data or use placeholders until you get the data.

### Goal: Example

- Twenty-five percent increase in prescribing rates at six months post project implementation. Verify that 76% of eligible vascular procedure patients are discharged on an antiplatelet and statin medication at six months after project implementation (June, 2015).
- Another 25% increase at one year post implementation. Verify that 95% of eligible vascular procedure patients are discharged on an antiplatelet and statin medication at one year after project implementation (January, 2016).

### Goal:

What do we want to achieve and when do we want to achieve it?
**QI Project Charter**

**Scope: Example**

- Educate vascular procedure providers on the importance of prescribing antiplatelets and statins to their vascular procedure patients and coordination with their primary care physicians
- Revise vascular discharge order sets
- Utilize the expertise of pharmacists and care coordinators
- The project will be tested for a 12-month period.

**Scope:** What areas will we improve and over what time period will we do the improvement? What are the limitations (e.g., limited to certain units or for a certain time period.)

**Deliverable(s):**

- Discharge order medication templates
- Sample PCP letter templates

**Deliverable(s)**

What new processes will we deliver in order to help reach our goals?

**Resources Required: Example**

- IT
- Care Coordinators
- Pharmacists

**Resources Required**

What people, materials, and/or finances will be needed to conduct the project? Who must be kept informed?
<table>
<thead>
<tr>
<th>Key Metrics</th>
<th>Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome Metrics: Example</strong></td>
<td>Milestone / Description Example</td>
</tr>
<tr>
<td>Increased one and five year survival rates for</td>
<td>• Confirm baseline information using VQI data</td>
</tr>
<tr>
<td>vascular procedure patients that were discharged</td>
<td>• Notify and educate all vascular procedure providers on the new initiative.</td>
</tr>
<tr>
<td>on antiplatelet and statin medications.</td>
<td>• Contact IT for guidance in adding templates</td>
</tr>
<tr>
<td></td>
<td>• Meet with care coordinators to identify programs to aid patients in obtaining medications, if needed.</td>
</tr>
<tr>
<td></td>
<td>• Revise 100% of provider discharge order sets to reflect AP and statin medication options.</td>
</tr>
<tr>
<td><strong>Outcome Metrics</strong></td>
<td><strong>Milestone / Description:</strong></td>
</tr>
<tr>
<td>“How will you know the project is successful?”</td>
<td>Complete ‘QI Project Overview’</td>
</tr>
<tr>
<td>e.g., LOS, surgical site infections</td>
<td>Confirm baseline outcome metric</td>
</tr>
<tr>
<td></td>
<td>Identify root cause / hypothesis</td>
</tr>
<tr>
<td></td>
<td>Identify potential improvement(s)</td>
</tr>
<tr>
<td></td>
<td>Implement improvement(s)</td>
</tr>
<tr>
<td></td>
<td>Evaluate progress &amp; confirm action plan</td>
</tr>
<tr>
<td><strong>Process Metrics: Example</strong></td>
<td></td>
</tr>
<tr>
<td>• Verify that 76% of eligible vascular procedure</td>
<td>• Confirm baseline information using VQI data</td>
</tr>
<tr>
<td>patients were discharged on an antiplatelet and</td>
<td>• Notify and educate all vascular procedure providers on the new initiative.</td>
</tr>
<tr>
<td>statin medication at six months after project</td>
<td>• Contact IT for guidance in adding templates</td>
</tr>
<tr>
<td>implementation using VQI and/or EMR data.</td>
<td>• Meet with care coordinators to identify programs to aid patients in obtaining medications, if needed.</td>
</tr>
<tr>
<td>• Verify that 95% of eligible PVI patients were</td>
<td>• Revise 100% of provider discharge order sets to reflect AP and statin medication options.</td>
</tr>
<tr>
<td>discharged on an antiplatelet and statin</td>
<td></td>
</tr>
<tr>
<td>medication at one year after project</td>
<td></td>
</tr>
<tr>
<td>implementation using VQI registry data and</td>
<td></td>
</tr>
<tr>
<td>reports using VQI and/or EMR data.</td>
<td></td>
</tr>
<tr>
<td><strong>Process Metrics:</strong></td>
<td></td>
</tr>
<tr>
<td>“How will you ensure the interventions you</td>
<td></td>
</tr>
<tr>
<td>implement are being completed?”</td>
<td></td>
</tr>
<tr>
<td>e.g., % pts on progressive care unit, %</td>
<td></td>
</tr>
<tr>
<td>discharged patients on statins and anti-</td>
<td></td>
</tr>
<tr>
<td>platelets Rx</td>
<td></td>
</tr>
</tbody>
</table>
MACRA/MIPS

December 2016 webinar on MACRA/MIPS that was presented by Jill Rathburn and Brad Johnson

https://drive.google.com/file/d/0B6sVggHY6rr5aVNOSnF0SDFVS00/view
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MIPS Proposed Timeline for 2019 Payment

Why I should care NOW

PERFORMANCE YEAR
SUBMIT DATA
PAYMENT ADJUSTMENT

JANUARY 1 – DECEMBER 31, 2017   MARCH 31, 2018   JANUARY 1, 2019

What you do today, will impact your payment in 2019!
Pick your Pace – A way to ease in and minimize impact

DON’T PARTICIPATE

If you don’t participate, you will receive a 4% negative payment adjustment

- $

SUBMIT SOMETHING

• One Measure
• One Activity

Avoid a negative payment

SUBMIT A PARTIAL YEAR

• Submit 90 days of 2017 data to Medicare

You may earn a neutral or small positive payment adjustment

+ $

SUBMIT A FULL YEAR

You may earn a moderate payment adjustment

FINANCIAL IMPACT
Ideas for MIPS using VQI Data

- Identify Quality Improvement Projects for your Center
- Request National Blinded Data Sets to research specific questions
- Support Certifications
- Utilize data to understand practice variation using different devices or techniques
- VQI is a specialty registry
Educational Webinars 2017

Topics for the educational webinars in the first half of 2017 include:

**February 23:** National QI Projects: Discharge Medications: Reaching and Sustaining our Goal of 100% by Randy R. De Martino, MD, MS and Cheryl R. Jackson, DNP, MS, RN, CPHQ

**March:** PVI Clone and CAS Registry/TCAR

**April 25:** National QI Projects: EVAR LTFU Imaging: Understanding Current Trends to Improve the Future

**May:** PVI – forum with users and developers
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2016 Participation Award Results

- 0 STARS
- 1 STAR
- 2 STARS
- 3 STARS

Last year vs. This year

0% 5% 10% 15% 20% 25% 30% 35% 40%

0 STARS 1 STAR 2 STARS 3 STARS
Participation Award potential changes:

- Participation in National, Regional or Local QI project using VQI data
- Credit for attendance at the Annual meeting (data managers only)
- Penalty of not being able to get data for research if your attendance at the regional meetings is low over a certain number of years
- Should you get a star award at all if you are on probation for <50% LTFU
- Additional participation point if your site gives a presentation at a regional meeting
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VQI Datasets for Research

• Data discrepancies identified
• Due to multiple revisions and coding
• No significant errors in key outcome variables (SO FAR – audit not done yet)
• **Conclusion** – Large complex data sets need periodic, regular review
• Multiple new quality assurance measures instituted
Why?

Large Complex Database

- Multiple revisions paper form access DB web based
- Mapping old to new changed variables
- Multiple modification of data fields (PCI &/or CABG changed to PCI, CABG or both)
- Coding errors
- Multiple changes in definitions
Results (so far)

- No significant impact on clinical findings
- No change in analysis (p values) or conclusions
- No significant errors in key outcome variables
- Most errors were in descriptive variables – H/O CAD
Data variability (References)


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Moving forward

New Quality Assurance Measures

• New Data Quality Control Testing
• New Sign off for Development Specifications and before release of new Code
• New Software for Quality Assurance
• New Code to ensure Consistency of BDS across Registries
• New Data Warehouse
Regional Reports:
Joe Schneider, MD

Notes: 1) In all reports, regional data are not shown for regions with <3 centers participating in the applicable registry. 2) In “by Center” bar charts, unless noted, data are not shown for centers with <10 cases. 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. 1, 2017.

New HTML format!!
## Total Procedure Volume, All Years (2003-Dec 2016)

<table>
<thead>
<tr>
<th>Your Region (N)</th>
<th>VQI (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>927</td>
</tr>
<tr>
<td>CEA</td>
<td>3430</td>
</tr>
<tr>
<td>EVAR</td>
<td>1223</td>
</tr>
<tr>
<td>HEMO</td>
<td>1807</td>
</tr>
<tr>
<td>INFRA</td>
<td>1188</td>
</tr>
<tr>
<td>OAAA</td>
<td>314</td>
</tr>
<tr>
<td>PVI</td>
<td>4719</td>
</tr>
<tr>
<td>SUPRA</td>
<td>549</td>
</tr>
<tr>
<td>TEVAR</td>
<td>290</td>
</tr>
<tr>
<td>IVCF</td>
<td>320</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>311</td>
</tr>
<tr>
<td>Overall</td>
<td>15252</td>
</tr>
<tr>
<td></td>
<td>322454</td>
</tr>
</tbody>
</table>
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Procedure Volume by Center in Your Region (2016)

- Other centers in your region
- Your center

Procedure Volume Across VQI (2016)


“Others” indicates centers that do not belong to a regional group.
Physician Specialties Across Your Region (2016, N=181 Physicians)
## Percentage of Procedures Submitted With Missing Data (2016)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Your Region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>309 (80%)</td>
<td>2952 (50%)</td>
</tr>
<tr>
<td>CEA</td>
<td>703 (43%)</td>
<td>13546 (29%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>271 (70%)</td>
<td>5291 (60%)</td>
</tr>
<tr>
<td>HEMO</td>
<td>402 (39%)</td>
<td>5690 (36%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>283 (60%)</td>
<td>5575 (81%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>54 (20%)</td>
<td>1064 (31%)</td>
</tr>
<tr>
<td>PVI</td>
<td>921 (37%)</td>
<td>15602 (52%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>120 (57%)</td>
<td>1852 (79%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>77 (44%)</td>
<td>1613 (28%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>1631 (17%)</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
<td>5197 (28%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>1718 (72%)</td>
</tr>
<tr>
<td>2016 overall</td>
<td>3310 (47%)</td>
<td>61731 (46%)</td>
</tr>
<tr>
<td>2015 overall</td>
<td>4616 (55%)</td>
<td>75813 (49%)</td>
</tr>
</tbody>
</table>
## Vascular Quality Initiative®

**LTFU as of January 1, 2017**

<table>
<thead>
<tr>
<th>Your Region</th>
<th>Your Region Value</th>
<th>VQI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>135 (58%)</td>
<td>2350 (66%)</td>
</tr>
<tr>
<td>CEA</td>
<td>861 (75%)</td>
<td>14507 (67%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>319 (77%)</td>
<td>5659 (70%)</td>
</tr>
<tr>
<td>HEMO</td>
<td>506 (71%)</td>
<td>6425 (61%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>319 (80%)</td>
<td>5834 (70%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>72 (71%)</td>
<td>1413 (73%)</td>
</tr>
<tr>
<td>PVI</td>
<td>1374 (77%)</td>
<td>20645 (67%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>153 (79%)</td>
<td>2111 (72%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>60 (67%)</td>
<td>1495 (65%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>109 (74%)</td>
<td>1693 (58%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>102 (72%)</td>
<td>1743 (67%)</td>
</tr>
<tr>
<td>2014 overall</td>
<td>4010 (75%)</td>
<td>63875 (67%)</td>
</tr>
<tr>
<td>2013 overall</td>
<td>2212 (81%)</td>
<td>45266 (70%)</td>
</tr>
</tbody>
</table>
Long-Term Follow-Up by Center in Your Region (2014)

- Other centers in your region
- Your center

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

Long-Term Follow-Up by Region Across VQI (2014)

- Virginia
- So. Cal.
- Mid-Atlantic
- Southeast
- New England
- MidSouth
- Others
- Rocky Mtn.
- Midwest
- N. Cal.
- New York
- VQI
- SOYONET
- Mid-America
- Michigan
- Carolinas
- G. Lakes
- Pacific NW
- Up.
- Midwest

“Others” indicates centers that do not belong to a regional group. *** indicates region’s rate differs significantly from the VQI rate.
Excludes patients who died in hospital and patients who were not treated for medical reason or non-compliant.

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**Discharge Antiplatelet+Statin Rate by Center in Your Region (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.

**Discharge Antiplatelet+Statin Rate by Region Across VQI (2016)**

- Pacific NW
- New York
- Virginias
- MidSouth
- SOVONET
- Southeast
- Rocky Mtns.
- Nor. Cal.
- MidAtlantic
- VQI
- Mid-America
- Up. Midwest
- Midwest
- Others
- Carolinas
- G. Lakes
- New England
- So. Cal.
- Michigan

“Others” indicates centers that do not belong to a regional group. “***” indicates region’s rate differs significantly from the VQI rate.
Varicose Veins: Percentage of Procedures with Complete Patient-Reported Outcome Measures Recorded at Follow Up procedures; includes only patients with any follow-up visit recorded. All regional data omitted because most regions have <3 centers. Patient-reported outcome measures (PROMs) include heaviness, achiness, swelling, throbbing, itching, appearance and impact on work in side of operation.
The table below shows the number of INFRA procedures in the VQI as of Jan. 1, 2017, the percentage of those cases in which chlorhexidine or chlorhexidine+alcohol skin prep was used, and the rate of in-hospital surgical-site infection.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of procedures</td>
<td>283</td>
<td>5537</td>
</tr>
<tr>
<td>Rate of chlorhexidine</td>
<td>75%</td>
<td>86%</td>
</tr>
<tr>
<td>or chlorhexidine+alcohol skin prep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate of in-hospital surgical-site infection</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>
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Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep in Your Region (2016)

- **Other centers in your region**
- **Your center**

Bars represent percentages, with the following key:

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

**Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep by Region Across VQI (2016)**

- **Mid-America**
- **Carolina**
- **Up Midwest**
- **G. Lakes**
- **Others**
- **Virgini**
- **Rocky Mtns.**
- **Mid-Atlantic**
- **VQI**
- **New York**
- **Southeast**
- **New England**
- **So. Cal.**
- **SOVNET**
- **Midwest**
- **Nor. Cal.**
- **Michigan**
- **MidSouth**

- **Others** indicates centers that do not belong to a regional group.
- ******* indicates region’s rate differs significantly from the VQI rate.
Excludes cut-down access guidance

The table below shows the number of percutaneous femoral PVI procedures in the VQI as of Jan. 1, 2017, the percentage of those cases in which ultrasound access guidance was used, and the rate of hematoma.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of percutaneous femoral procedures</td>
<td>862</td>
<td>14093</td>
</tr>
<tr>
<td>Rate of ultrasound access guidance</td>
<td>16%</td>
<td>67%</td>
</tr>
<tr>
<td>Rate of any hematoma (minor, moderate or major)</td>
<td>3.6%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Rate of moderate or major hematoma</td>
<td>0.5%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
Rate of Ultrasound Access Guidance in Your Region (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 Ultrasound Access Guidance by Region Across VQI (2016)

- Mid-America*
- SOVONET*
- G. Lakes*
- Midwest*
- Mid-Atlantic
- VQI
- Carolinas
- Up Midwest
- So. Cal.
- New England*
- Southeast*
- Virginias*
- Rocky Mtns.*
- New York*
- MidSouth*
- Nor. Cal.*

“Others” indicates centers that do not belong to a regional group. “***” indicates region’s rate differs significantly from the VQI rate.
PVI: Percentage of Patients With ABI or TBI Reported Before Procedure (2016)

“ABI or TBI reported” indicates at least one measure was recorded for the side of the operation, or on both sides for bilateral and aortic procedures. The table below shows the number of PVI procedures in the VQI as of Jan. 1, 2017, and the percentage of those cases in which ABI or TBI was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PVI procedures</td>
<td>922</td>
<td>15568</td>
</tr>
<tr>
<td>Percentage with ABI/TBI recorded before procedure</td>
<td>86%</td>
<td>73%</td>
</tr>
<tr>
<td>Percentage of claudicants with ABI/TBI recorded</td>
<td>89%</td>
<td>79%</td>
</tr>
<tr>
<td>Percentage of patients with critical limb ischemia with ABI/TBI recorded</td>
<td>84%</td>
<td>70%</td>
</tr>
</tbody>
</table>
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Rate of ABI/TBI Assessment Before PVI in Your Region (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 ABI/TBI Assessment Before PVI by Region Across VQI (2016)

- Others” indicates centers that do not belong to a regional group. *** indicates region’s rate differs significantly from the VQI rate.
The table below shows the number of EVAR procedures with long-term follow-up that were in the VQI as of Jan. 1, 2017, and the percentage of those cases in which sac diameter was recorded at LTFU.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures with at least 9 months of follow-up</td>
<td>246</td>
<td>3937</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td>81%</td>
<td>79%</td>
</tr>
</tbody>
</table>
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Rate of LTFU Sac Diameter Reporting in Your Region (2014)

- 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 (2014)

"Others" indicates centers that do not belong to a regional group. "***" indicates region's rate differs significantly from the VQI rate.
TEVAR: Rate of Sac Diameter Reporting at Long-Term Follow Up

2014, excluding patients without at least 9 month follow up
(your region did not have at least 3 centers with 10 procedures)

"Others" indicates centers that do not belong to a regional group. "***" indicates region’s rate differs significantly from the VQI rate.
Carotid Endarterectomy: Percentage of Patients with LOS>1 Day (2016)

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. The table below shows the number of CEA procedures meeting inclusion criteria that were in the VQI as of Jan. 1, 2017, and the observed and expected rates of those cases with LOS>1 Day.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures</td>
<td>506</td>
<td>10108</td>
</tr>
<tr>
<td>meeting inclusion criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>among procedures meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inclusion criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of procedures with</td>
<td>492</td>
<td>9606</td>
</tr>
<tr>
<td>complete data*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td>among cases with complete data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day</td>
<td>25%</td>
<td>NA</td>
</tr>
<tr>
<td>among cases with complete data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of</td>
<td>0.27</td>
<td>NA</td>
</tr>
<tr>
<td>observed and expected rates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Rate of CEA Patients With LOS>1 Day in Your Region (2016)

- 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 (2016)

- Observed
- Expected

"Others" indicates centers that do not belong to a regional group. "**" indicates region's observed rate differs significantly from its expected rate.
OAAA Repair: Percentage of Patients with LOS>8 Days (2016)
Excludes ruptured aneurysms and in-hospital deaths with LOS<=8 days, procedures not done on day of admission and weekend procedures.

The table below shows the number of OAAA procedures meeting the inclusion criteria that were in the VQI as of Jan. 1, 2017, and the observed and expected rates of those cases with LOS>8 Days.

(your region did not have at least 3 centers with 10 procedures)
Endovascular AAA Repair: Percentage of Patients with LOS>2 Days (2016)

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.

The table below shows the number of EVAR procedures meeting the inclusion criteria that were in the VQI as of Jan. 1, 2017, and the observed and expected rates of those cases with LOS>2 Days.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures meeting inclusion criteria</td>
<td>219</td>
<td>4194</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>191</td>
<td>3905</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 among cases with complete data</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 among cases with complete data*</td>
<td>15%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.15</td>
<td>NA</td>
</tr>
</tbody>
</table>
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**Rate of EVAR Patients With LOS>2 Days in Your Region (2016)**

- Other centers in your region
- Your center

---

**Rate of EVAR Patients With LOS>2 Days by Region Across VQI (2016)**

- Observed
- Expected

---

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

"Others" indicates centers that do not belong to a regional group. "**" indicates region’s observed rate differs significantly from its expected rate.
Hemodialysis Access: Percentage of Primary AVF vs. Graft (2016)

Excludes patients with previous access procedure in the same arm

Rate of Primary AVF Access in Your Region (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 Primary AVF Access by Region Across VQI (2016)

Mid-Atlantic
Rocky Mtn.
Mid-America
So. Cal.
Michigan
VQI
New York
New England
Midwest
Southeast
Virginia
Cardina

“Others” indicates centers that do not belong to a regional group. “***” indicates region’s rate differs significantly from the VQI rate.
IVCF: Percentage of Temporary Filters With Retrieval or Attempt at Retrieval (2015)

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

The table below shows the number of IVCF procedures meeting the inclusion criteria that were in the VQI as of Jan. 1, 2017, 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 Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of access procedures meeting inclusion criteria</td>
<td>NA (&lt;3 centers)</td>
<td>1562</td>
</tr>
<tr>
<td>Percentage with filter retrieval, or attempt at retrieval</td>
<td></td>
<td>33%</td>
</tr>
</tbody>
</table>
IVCF: Percentage of Temporary Filters With Retrieval or Attempt at Retrieval (2015)

(your region did not have at least 3 centers with 10 procedures)

Rate of IVCF Retrieval by Region Across VQI (2015)

"Others" indicates centers that do not belong to a regional group. "**" indicates region’s rate differs significantly from the VQI rate.
**Carotid Artery Stent: Stroke or Death in Hospital (2016)**

Elective procedures, excluding prior ipsilateral CAS, 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. 1, 2017, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CAS procedures meeting inclusion criteria</td>
<td>146</td>
<td>1708</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>3.4%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>138</td>
<td>1610</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>3.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>2%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.21</td>
<td>NA</td>
</tr>
</tbody>
</table>
Rate of In-Hospital Stroke or Death After CAS in Your Region (2016)

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 CAS by Region Across VQI (2016)

"Others" indicates centers that do not belong to a regional group. "**" indicates region's observed rate differs significantly from its expected rate.
Carotid Endarterectomy: Stroke or Death in Hospital (2016)

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

The table below shows the number of CEA procedures meeting the inclusion criteria that were in the VQI as of Jan. 1, 2017, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>554</td>
<td>11302</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0.9%</td>
<td>1%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>538</td>
<td>10751</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0.9%</td>
<td>1%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>1.1%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>1</td>
<td>NA</td>
</tr>
</tbody>
</table>
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Rate of In-Hospital Stroke or Death After CEA in Your Region (2016)

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 (2016)

“Others” indicates centers that do not belong to a regional group. *** indicates region’s observed rate differs significantly from its expected rate.
Infrainguinal Bypass: Rate of Major Complications (2016)
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.
The table below shows the number of INFRA cases with indication of rest pain or tissue loss that were in the VQI as of Jan. 1, 2017, and the percentage of those cases that resulted in in-hospital death, ipsilateral amputation or graft occlusion.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of access procedures meeting inclusion criteria</td>
<td>136</td>
<td>3242</td>
</tr>
<tr>
<td>Percentage with major complications after INFRA</td>
<td>2.9%</td>
<td>4.1%</td>
</tr>
</tbody>
</table>
Rate of Major Complications After INFRA in Your Region (2016)

Other centers in your region: 8%
Your center: 6%

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 (2016)

So. Ca. 1%
Nor. Ca. 2%
G. Lakes 2%
Mid-South 3%
Mid-America 3%
New England 4%
Up. Midwest 4%
Virginias 4%
Carolinas 4%
Southeast 4%
Rocky Mtns. 4%
Vql 5%
New York 5%
Midwest 5%
Michigan 5%
Mid-Atlantic 5%
Others 6%
SOVONET* 6%

“Others” indicates centers that do not belong to a regional group. ** indicates region’s rate differs significantly from the VQI rate.
Open Non-ruptured AAA: In hospital Mortality (2016)

Elective procedures, excluding patients with prior aortic surgery, concomitant renal, infrainguinal or other abdominal procedures, and procedures performed on the weekend.

(your region did not have at least 3 hospitals with 10 procedures)
Arterial Quality Council Update:
Todd Vogel, MD
The Arterial Quality Committee (AQC) discussed term limits and succession planning for VQI Registry Chairs and Vice Chairs and recommended:

- Three year terms renewable every year for one year
- The Vice Chair should be prepared to accept the Chair position when the Chair steps down
- The Chair can rejoin the committee after stepping down
- The AQC Chair has the right to ask a Chair or Vice Chair to step down if the Registry Chair or Vice Chair is unable to fully participate

Registry Chairs were requested to examine existing research projects to help identify two to three quality improvement projects that may lead to best practice recommendations for procedures included in each Registry.
Implementation of National QI Projects:

- **Three VQI committees** working on the National QI project rollout of improving discharge medication and EVAR LTFU imaging rates.
- Provide physician specific reports and COPI reports for discussion at regional meetings
- Identify high performing centers
- Seek industry funding for EVAR LTFU imaging once a plan of work has been completed.
- **Publication** of National QI projects in Feb 22\(^{nd}\) issue of *Vascular Specialist*
PSO National QI Project Committee Process

SVS PSO
- Identify high performing centers
- Provide input to/from regional meetings
- Develop educational resources
- Develop COPI and Physician Reports
- Align with MIPS/MACRA
- Track successes

Arterial Quality Committee
- Goals, measures, definitions, benchmarks
- Analysis of results
- QI bundles (recommended clinical practices)
- Outcomes of interest to payers, administrators
- Recommended practices

Communications Committee
- Messaging to key stakeholders (providers, patients, administrators)
- Oversight of articles, press releases
- Physician and hospital engagement

Quality Improvement Workgroup
- QI implementation tools
- ‘How-To’ presentations
- Expert guidance for user groups
Implementation of National QI Projects:

**Later Steps**

- Planned VQI publication describing outcomes of patients with and without EVAR follow-up and imaging
- Registry changes: Automatic push reports that provide centers with information on patients needing follow-up imaging
- Incorporate QI project participation as part of the Participation Awards. Inform VQI members that adding QI project participation as part of the Awards program is being considered.
- Medicare integration/query to determine if imaging is being done elsewhere, but not entered in the VQI registry.
COPI and Physician Reports

• In addition to the spring and fall regional reports, this year we have published three COPI reports:
  – 30-day stroke and 1-year mortality after CEA
  – 30-day stroke or 1-year mortality after CAS
  – COPI report on hematoma after PVI

• We have also published three surgeon-level reports:
  – Percentage of high-risk patients receiving CEA
  – Percentage of patients receiving follow-up imaging after EVAR
  – Surgeon-level report on percentage of high-risk patients receiving CAS

• 2017 Plan to repeat previous reports:
  – First one is CEA LOS
Research Advisory Council Update: Andrew Hoel, MD
National Research Process

http://www.vascularqualityinitiative.org/vqi-resource-library/quality-research/

Approved Project List – as of 12/13/2016

• To submit a proposal to be considered for the National RAC, please follow the link below and select “PSO National RAC – MONTH Proposal Submission.

http://abstracts123.com/svs1/meetinglogin
National Research Process

Proposal Submissions

April 2017
Call for Proposals: February 14, 2017
Due Date: Midnight March 27, 2017
Meeting: April 10, 2017
Notification Sent: April 11, 2017

June 2017 – Dates Subject to Change
Call for Proposals: April 11, 2017
Due Date: May 29, 2017
Meeting: June 12, 2017
Notifications Sent: June 13, 2017
Regional Research Projects:

• Any new ideas?
QI Projects

• “National readmission rates in patients with critical limb ischemia” – Kamal Gupta, MD
• “Role of a structured cardiac rehabilitation program in patients with PAD post revascularization” – Kamal Gupta, MD
Venous Quality Council Update:
Ravi Hasanadka, MD
Venous Quality Council

Venous Stent Registry: release 2018

Clinical Workgroup:
Marc Passman, MD (chair), William Marston MD, Tony Gasparis MD, Rabih Chaer MD, BK Lal MD, Lowell Kabnick MD

Industry and FDA Collaboration:
Bard, Cook, Gore, Medtronic, Veniti
2 venous registries 2016

<table>
<thead>
<tr>
<th>Procedure</th>
<th>MAVSG</th>
<th>National VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVC filters</td>
<td>&lt; 3 centers</td>
<td>1631</td>
</tr>
<tr>
<td>TEVAR</td>
<td>77</td>
<td>1613</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>&lt; 3 centers</td>
<td>5199</td>
</tr>
<tr>
<td>EVAR</td>
<td>271</td>
<td>5291</td>
</tr>
<tr>
<td>Procedure</td>
<td>MAVSG</td>
<td>National VQI</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>IVC filters</td>
<td>&lt; 3 centers</td>
<td>17% lowest</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>&lt; 3 centers</td>
<td>28% tied for 2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>CEA</td>
<td>43%</td>
<td>29%</td>
</tr>
<tr>
<td>Open AAA</td>
<td>20%</td>
<td>31%</td>
</tr>
</tbody>
</table>
Varicose Veins: Percentage of Procedures With Complete Patient-Reported Outcome Measures Recorded at Follow-Up (2015)

Includes only patients with any follow-up visit recorded. All regional data omitted because most regions have <3 centers. Patient-reported outcomes measures (PROMs) include heaviness, achiness, swelling, throbbing, itching, appearance and impact on work inside of operation.

The table below shows the number of procedures with any follow-up in the VQI as of Jan. 1, 2017, and the percentage of those patients with all PROMs recorded at follow-up.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>114</td>
<td>2213</td>
</tr>
<tr>
<td>Percentage with all PROMs recorded</td>
<td>61%</td>
<td>81%</td>
</tr>
</tbody>
</table>

**PROMs by Center Across VQI (2015)**

*** Indicates center's rate differs significantly from the overall VQI rate.
IVCF: Percentage of Temporary Filters With Retrieval or Attempt at Retrieval (2015)

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

The table below shows the number of IVCF procedures meeting the inclusion criteria that were in the VQI as of Jan. 1, 2017, 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 access procedures meeting inclusion criteria</td>
<td>0</td>
<td>NA (&lt;3 centers)</td>
<td>1562</td>
</tr>
<tr>
<td>Percentage with filter retrieval, or attempt at retrieval</td>
<td>NA</td>
<td></td>
<td>33%</td>
</tr>
</tbody>
</table>

Rate of IVCF Retrieval by Year

![Graph showing rate of IVCF retrieval by year]
IVC Filter Retrieval

Rate of IVCF Retrieval by Region Across VQI (2015)

*Others* indicates centers that do not belong to a regional group. ** Indicates region’s rate differs significantly from the VQI rate.
Venous Stent Registry

• Release in 2018

• Clinical Workgroup:
Marc Passman, MD (chair), William Marston MD, Tony Gasparis MD, Rabih Chaer MD, BK Lal MD, Lowell Kabnick MD

• Industry and FDA collaboration:
Bard, Cook, Gore, Medtronic, Veniti
Veniti Vici Venous Stent

<table>
<thead>
<tr>
<th>Code</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEN12060</td>
<td>12mm x 60mm</td>
</tr>
<tr>
<td>VEN12090</td>
<td>12mm x 90mm</td>
</tr>
<tr>
<td>VEN12120</td>
<td>12mm x 120mm</td>
</tr>
<tr>
<td>VEN14060</td>
<td>14mm x 60mm</td>
</tr>
<tr>
<td>VEN14090</td>
<td>14mm x 90mm</td>
</tr>
<tr>
<td>VEN14120</td>
<td>14mm x 120mm</td>
</tr>
<tr>
<td>VEN16060</td>
<td>16mm x 60mm</td>
</tr>
<tr>
<td>VEN16090</td>
<td>16mm x 90mm</td>
</tr>
<tr>
<td>VEN16120</td>
<td>16mm x 120mm</td>
</tr>
</tbody>
</table>

Compatible with .035 inch (.89mm) guidewire and 9 French introducer sheath.
US Guidance with PVI 2016

Rate of Ultrasound Access Guidance by Region Across VQI (2016)

"Others" indicates centers that do not belong to a regional group. "*" indicates region’s rate differs significantly from the VQI rate.
### Any Hematoma following PVI 2016

<table>
<thead>
<tr>
<th>Region</th>
<th>PVI cases</th>
<th>% US guidance</th>
<th>% hematoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>862</td>
<td>16</td>
<td>3.6</td>
</tr>
<tr>
<td>VQI</td>
<td>14093</td>
<td>67</td>
<td>3.3</td>
</tr>
</tbody>
</table>

\[ P = 0.0001 \quad \text{P} = 0.64 \]
Regional Quality Project

• NE VSG
  – routine user (>80%) vs. infrequent user (<20%)
  – 0.8% vs. 4.5%

• Our project
  – Expanded outcomes:
    • Hematoma
    • Pseudoaneurym
    • AV fistula
  – Procedural and Patient Risk factors
    • Includes Sheath size, procedure anticoagulation, protamine usage, antiplatelets, Thrombolysis, closure device, length of case, etc.
Governing Council Update:
Joe Schneider, MD
GC meeting at VEITH

- **Strategic Planning Summary**
  - National Quality Projects
  - Defining the Value of VQI to SVS Members
  - Data Integrity
  - Focus on MIPS
  - Work with SVS and the Clinical Practice Committee on Appropriateness

- **M2S Update**
  - CAS Revisions
  - Work with Medstreaming on Data Integration
  - Work with the PSO on MIPS/MACRA
GC meeting at VEITH

• Device Identification Sub-Committee
  – New policy for the release of BDS files with Device Identifiers
  – Would need an attestation that research was free of conflicts
  – Research would need to be reviewed before Identifiers would be granted
  – Need to work on Communications with Industry, prior to Publication

• Potential New Projects
  – EVAR Cost Study with MedAssets/Visient
  – Venous Stenting Registry
  – US News and World Report
Pathways Development Update
- Debbie MacAulay
PVI Clone Data

- Release in Q1 of this year.
- Functionality will allow users to generate a new PVI procedure based on an existing PVI procedure.
PVI Clone Data

- Certain data elements from the Demographics and History section are included and all have are time sensitive to the date of procedure.
- This should provide a large time savings to users who are entering repeat PVI procedures for a single patient.

<table>
<thead>
<tr>
<th>Page</th>
<th>Region</th>
<th>Field Name</th>
<th>Long Field Name</th>
<th>Field Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>Pre-Adm Status:</td>
<td>Living Status</td>
<td>Living Status</td>
<td>Home</td>
</tr>
<tr>
<td>Demographics</td>
<td>Pre-Adm Status:</td>
<td>Functional Status</td>
<td>Functional Status</td>
<td>Full</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>CVD</td>
<td>CVD</td>
<td>None</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>CAD</td>
<td>CAD Symptoms</td>
<td>None</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>CHF</td>
<td>Prior CHF</td>
<td>None</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>Dysrhythmia</td>
<td>Dysrhythmia</td>
<td>No</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>COPD</td>
<td>COPD</td>
<td>Not-Treated</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>Diabetes</td>
<td>Diabetes</td>
<td>None</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>Dialysis</td>
<td>Dialysis</td>
<td>No</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>Hypertension</td>
<td>Hypertension</td>
<td>No</td>
</tr>
<tr>
<td>Demographics</td>
<td>Co-morbidities:</td>
<td>Smoking</td>
<td>Smoking</td>
<td>Never</td>
</tr>
<tr>
<td>Demographics</td>
<td>Testing:</td>
<td>Stress Test</td>
<td>Stress Test</td>
<td>Normal</td>
</tr>
<tr>
<td>Demographics</td>
<td>Testing:</td>
<td>Creatinine</td>
<td>Creatinine</td>
<td>12</td>
</tr>
<tr>
<td>Demographics</td>
<td>Pre-Procedure Medications:</td>
<td>Pre-ACE-inhibitor/ARB</td>
<td>Pre-op ACE-Inhibitor/ARB</td>
<td>1080.8</td>
</tr>
<tr>
<td>Demographics</td>
<td>Pre-Procedure Medications:</td>
<td>Pre ASA</td>
<td>Pre-op ASA</td>
<td>Yes</td>
</tr>
<tr>
<td>Demographics</td>
<td>Pre-Procedure Medications:</td>
<td>Pre Chronic Anticoagulant</td>
<td>Pre-op Chronic Anticoagulant</td>
<td>Vitamin K Antagonist</td>
</tr>
<tr>
<td>Demographics</td>
<td>Pre-Procedure Medications:</td>
<td>Pre Antiplatelet Drugs</td>
<td>Pre-op P2Y12 Antagonist</td>
<td>None</td>
</tr>
</tbody>
</table>
PVI Post-Procedure Tab Revision

• Redesign of the Post-Procedure tab of the PVI registry.
• Goal of improving data collection and complication rate accuracy.
• Streamlined the user experience and reduces the chance of information being missed.
• Discharge Status is now being collected for every PVI procedure.
### PVI Post-Procedure Tab Revision

#### Post-Procedure Information

<table>
<thead>
<tr>
<th>Complications</th>
<th>Select ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure Complications</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Discharge Status</td>
<td>Select ▼</td>
</tr>
</tbody>
</table>

#### Complications

<table>
<thead>
<tr>
<th>Type</th>
<th>Select ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Renal</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Other</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Access Site Cx</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Serious Contrast Reaction</td>
<td>Select ▼</td>
</tr>
</tbody>
</table>

#### Artery Complications/Treatments

<table>
<thead>
<tr>
<th>Type</th>
<th>Select ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombosis</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Dissection Remote</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Embolization</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Perforation</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Target Lesion Dissection</td>
<td>Select ▼</td>
</tr>
</tbody>
</table>

#### Access Site Complications/Treatments

<table>
<thead>
<tr>
<th>Site 1</th>
<th>Select ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoma</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Stenosis/Occlusion</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Infection</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Pseudaneurysm</td>
<td>Select ▼</td>
</tr>
<tr>
<td>AV Fistula</td>
<td>Select ▼</td>
</tr>
</tbody>
</table>

#### Post-Procedure Medications

<table>
<thead>
<tr>
<th>Medications</th>
<th>Select ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Change In Medications</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post ASA</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post Antiplatelet Drugs</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post Chronic Anticoagulant</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post ACE-Inhibitor/ARB</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post Statin</td>
<td>Select ▼</td>
</tr>
<tr>
<td>Post Cilostazol</td>
<td>Select ▼</td>
</tr>
</tbody>
</table>

#### Comments

...
TEVAR Dissection Postmarket Surveillance

- Sponsors: Medtronic and W.L. Gore
- Sites have received $854,100 as of 1/31/2017 as compensation for their time.
- FDA has received 4 summary reports (non-identifiable data)
- Steering Committee is drafting a abstract highlighting 30 day outcomes

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Enrolling new sites</th>
<th>Number of Sites</th>
<th>Number of Patients</th>
<th>Follow Up</th>
<th>Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Year</td>
<td>No</td>
<td>50</td>
<td>400 (389 patients enrolled)</td>
<td>At 30 days and annually for 5 years</td>
<td>Per Subject: $4,000 - $1300 Initial Treatment - $400 Each follow up visits - $700 Final 5 year follow up $700 Add’ l intervention</td>
</tr>
<tr>
<td>1 Year</td>
<td>Yes</td>
<td>Up to 50</td>
<td>200 (143 patients enrolled)</td>
<td>Annually for 1 year</td>
<td>$400 for each procedure with a completed 1 year follow up</td>
</tr>
</tbody>
</table>
Vascular Quality Initiative®

Lombard Aorfix Postmarket Surveillance

- Sponsor: Lombard Medical
- EVAR Registry
- Sites have received $79,200.00 as of 1/31/2017 as compensation for their time.
- Lombard has received 4 data reports (non-identifiable data)

<table>
<thead>
<tr>
<th>Enrolling</th>
<th>Number of Sites</th>
<th>Number of Patients</th>
<th>Follow Up</th>
<th>Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50</td>
<td>234 (40 patients enrolled)</td>
<td>At 30 days and annually for 5 years</td>
<td>Per Subject: $4,000 - $1300 Initial Treatment - $400 Each follow up visits - $700 Final 5 year follow up $700 Add’l intervention</td>
</tr>
</tbody>
</table>
• Sponsor: Medtronic
• PVI Registry
• The Medtronic IN.PACT® Admiral® DCB ISR Project is a prospective, non-randomized, multi-center, single arm post market registry surveillance of the clinical use of the Medtronic IN.PACT® Admiral® Paclitaxel-Coated PTA Balloon
• The primary objective of this project is to assess the long-term safety and performance of the IN.PACT® Admiral® DCB in a U.S. population for the treatment of ISR lesions in the superficial femoral and popliteal arteries.

<table>
<thead>
<tr>
<th>Enrolling</th>
<th>Number of Sites</th>
<th>Number of Patients</th>
<th>Follow Up</th>
<th>Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50</td>
<td>300 (2 patients enrolled)</td>
<td>At 12, 24 and 36 Months</td>
<td>Per Subject: $1,950 - $350 Initial Treatment - $500 1 and 2 year FU visits - $600 Final 3 year FU visit</td>
</tr>
</tbody>
</table>
Bard® LifeStent® Popliteal Artery Stent Project

- Sponsor: Bard Peripheral Vascular, Inc.
- PVI Registry
- Objective: to conduct long term post-market surveillance of the safety (including fractures assessed at revision) and effectiveness of the Bard® LifeStent® Vascular Stent Systems for the treatment of symptomatic de novo or restenotic lesions in the popliteal artery.

<table>
<thead>
<tr>
<th>Enrolling</th>
<th>Number of Sites</th>
<th>Number of Patients</th>
<th>Follow Up</th>
<th>Reimbursement</th>
</tr>
</thead>
</table>
| Yes       | Up to 30 (5 currently enrolled) | 74 | 12 months and 24 months | Per Subject: $1400  
- $400 Initial Treatment  
- $500 Each follow up visits  
- $400 Additional TLR or TVR intervention |
**CREST 2 Registry Project**

- CAS Registry with Supplemental 1-page form
- Enrolling
- 64 Physicians are participating through VQI
- Objectives
  - Promote rapid initiation and completion of enrollment in the CREST-2 trial
  - Ensure that CAS is performed by adequately experienced operators within CREST-2 and C2R
  - Closely monitor clinical outcomes of C2R patients
  - Prevent inappropriate use of CAS outside of C2R
- C2R Investigators have received 10 reports
  - Patient-level data is non-identifiable per HIPAA
  - Physician and center names are transferred IAW project data sharing agreement
Trans-Carotid Artery Revascularization Project

- Collaboration with CMS to provide reimbursement for TCAR in medical high risk symptomatic or asymptomatic patients if entered into VQI CAS Registry + 1 Yr follow-up
- Data will be compared with outcome of CEA procedures in VQI during the same time interval
- Goal is to generate real-world data for future decisions about coverage of TCAR as distinct from trans-femoral CAS
- Enter TCAR case using FDA approved stent/flow-reversal into Registry, submit Medicare claim using NCT 02850588
Trans-Carotid Artery Revascularization Project

VQI Information:
http://www.vascularqualityinitiative.org/vqi-resource-library/tcar-surveillance-project/

Clinical Trials Information:
https://clinicaltrials.gov/ct2/show/NCT02850588?term=TCAR&rank=1

CMS:
• https://www.cms.gov/Medicare/Medicare-General-Information/MedicareApprovedFacilitie/Carotid-Artery-Stenting-CAS-Investigational-Studies.html
TCAR vs. CREST2

• For physicians that are doing TCAR and are not in CREST2:
  – Use the new CAS form, include the NCT# on the claim

• For physicians that are doing just CREST2 or TCAR and ARE in CREST2:
  – Use the original CAS form (not the new CAS form), and follow the CREST2 instructions. This ensures that the case is provided to the CREST2 team and the physician gets paid.
Email Deliverability

Have you experienced problems receiving our email newsletters or PATHWAYS updates? Contact us at vqi@m2s.com if you are not receiving emails from the VQI or PATHWAYS.

Types of emails we are currently sending:
• VQI Pulse eNewsletter
• PATHWAYS product updates
• VQI Registry news
• Webinar events
• and much more!
<table>
<thead>
<tr>
<th>Potential Members</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Memorial Hospital of Carbondale</td>
<td>Carbondale</td>
<td>IL</td>
</tr>
<tr>
<td>University of Iowa</td>
<td>Iowa City</td>
<td>IA</td>
</tr>
<tr>
<td>Genesis Medical Center</td>
<td>Davenport</td>
<td>IA</td>
</tr>
<tr>
<td>St. Luke's Hospital</td>
<td>Cedar Rapids</td>
<td>IA</td>
</tr>
<tr>
<td>Holy Cross Hospital</td>
<td>Chicago</td>
<td>IL</td>
</tr>
<tr>
<td>Christ Hospital and Medical Center</td>
<td>Oak Lawn</td>
<td>IL</td>
</tr>
<tr>
<td>Evanston Hospital</td>
<td>Evanston</td>
<td>IL</td>
</tr>
<tr>
<td>St. Joseph's Hospital</td>
<td>Bloomington</td>
<td>IL</td>
</tr>
<tr>
<td>Shawnee Mission Medical Center</td>
<td>Shawnee Mission</td>
<td>KE</td>
</tr>
<tr>
<td>Rush University Medical Center</td>
<td>Chicago</td>
<td>IL</td>
</tr>
<tr>
<td>St. Louis University Hospital</td>
<td>St. Louis</td>
<td>MO</td>
</tr>
</tbody>
</table>
General Business:

Round Table
Next Meeting

- Fall 2017 – Chicago, IL – Wednesday, Sept 6, 2017  
  (In conjunction with MVSS – 9/7-9/17)
- Spring 2018 – Peoria, IL
- Fall 2018 – Accepting offers
- Spring 2019 – Accepting offers